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Applications and Models

JAMES R. HITCHNER

Financial valuation

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JAMES R. HITCHNER

John Wiley & Sons, Inc.

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To my three children, the shining lights of my life. I love you more than I ever dreamed possible. Jason Earle Hitchner, Michael James Hitchner, Deborah Marie Hitchner

To the families of all the authors. Thank you for enduring our absences during long nights and weekends. We appreciate your patience, tolerance and support in preparing this book.

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Editor

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preface

Financial Valuation: Applications and Models (FV) is an all-encompassing valuation text that presents the application of financial valuation theory in an easily understood manner. Although valuation theory is thoroughly discussed, the focus is on applications and methods. FV contains numerous examples and methods that will assist the reader in navigating a valuation project, along with hundreds of short, easily understandable "ValTips." These ValTips alert the reader to important and often controversial issues.

We have assembled 25 highly visible and well-respected valuation professionals to discuss and agree on the proper methods of valuation and to collectively present the group's views and positions on business valuation concepts and, most importantly, applications. Each author is the coauthor of the entire book. The authors come from all over the United States and are members of many professional valuation and financial associations including the American Institute of Certified Public Accountants (AICPA), the American Society of Appraisers (ASA), the Association for Investment Management and Research (AIMR), the Institute of Business Appraisers (IBA) and the National Association of Certified Valuation Analysts (NACVA). Many hold multiple designations or certifications:

- Twenty-two are Certified Public Accountants (CPAs).
- Twenty are Accredited in Business Valuation (ABVs) with AICPA.
- Fifteen are Accredited Senior Appraisers (ASAs) with ASA.
- Seven are Certified Valuation Analysts (CVAs) with NACVA.
- Four are Certified Business Appraisers (CBAs) with IBA.
- Three are Chartered Financial Analysts (CFAs) with AIMR.

Collectively they have several hundred years of valuation and related financial experience.

This is the first time such a large group of diverse valuation practitioners has been assembled to agree on the application of valuation principles and methods. Given the generally subjective nature of valuation and the strong opinions that seem to go with being a valuation analyst, this was no easy task. We hope we have advanced the profession by providing our agreed upon views. We invite other practitioners to comment on this edition and/or assist in future editions of this book. We will never gain consensus in everything in the valuation profession; however, we do hope to narrow the long list of controversies and disagreements. This text represents the state of the art in the business valuation profession as it evolves.

This book includes basic, intermediate and advanced topics, including:

- Shareholder disputes
- Mergers and acquisitions

- Income, estate and gift tax
- Marital dissolution
- ESOPs
- Financial reporting
- Discounts and premiums
- Family limited partnerships
- Healthcare
- Intellectual property
- Commercial damages
- High tech

FV is targeted to the following professionals and groups who are typically exposed to financial valuation issues:

- Appraisers
- Appraisal associations and societies
- Actuaries
- Attorneys
- Bankers
- Business brokers
- Business executives including CEOs, CFOs and tax directors
- Business owners
- CPAs
- Estate and gift planners
- Financial analysts
- Government agencies including the IRS, SEC and DOL
- Insurance agents
- Investment advisors
- Investment bankers
- Judges
- Pension administrators
- Stockbrokers

In Chapter 24 we have taken many of the subjective and difficult areas of valuation and assembled them into one concise chapter with Valuation Views (VV) to increase awareness of and solicit comments on these controversies. This is presented in a case study/report format that guides the reader through the preparation and reporting of a business valuation and conclusion of value. Other chapters of interest are:

Chapter 3, *Financial Statement and Company Risk Analysis*, presents qualitative and quantitative methods of analyzing a company including a detailed example.

Chapter 4, *Income Approach*, includes a detailed example on the proper application of the excess cash flow (earnings) method.

Chapter 5, *Cost of Capital/Rates of Return*, includes a comprehensive presentation on the application of empirical data for determining risk premiums in discount and capitalization rates.

Chapter 6, *Market Approach*, presents a quantitative method for using and adjusting guideline public company valuation multiples for size and growth differences.

Chapter 9, *Report Writing*, presents a detailed valuation report with numerous comments on why certain items were included or excluded.

Chapter 12, *Valuation of Family Limited Partnerships*, presents a detailed case study on the valuation of a Family Limited Partnership including the selection of discounts for lack of control and lack of marketability.

Chapter 13, *Summary of Court Case Issues*, includes synopses of over 40 tax court cases organized by major valuation areas of dispute.

Chapter 19, *Valuation of Healthcare Service Businesses*, includes two detailed case studies: a surgery center and a hospital.

Chapter 20, *Valuation of Intangible Assets*, includes a detailed case study on an allocation of purchase price for a business combination under new SFAS 141.

We also include brief examples of two emerging areas of valuation: Economic Value Added (EVA) and real option theory.

Financial valuations are very much affected by specific facts and circumstances. As such, the views expressed in these written materials do not necessarily reflect the professional opinions or positions that the authors would take in every business valuation assignment, or in providing business valuation services in connection with an actual litigation matter. Every situation is unique and differing facts and circumstances may result in variations of the applied methodologies.

Nothing contained in these written materials shall be construed as the rendering of valuation advice; the rendering of a valuation opinion; the rendering of an opinion of a particular valuation position; or the rendering of any other professional opinion or service.

Business valuation services are necessarily fact-sensitive particularly in a litigation context. Therefore, the authors urge readers to apply their expertise to particular valuation fact patterns that they encounter, or to seek competent professional assistance as warranted in the circumstances.

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Disclaimer Excluding Any Warranties: This book is designed to provide guidance to analysts, auditors, and management but is not to be used as a substitute for professional judgment. Procedures must be altered to fit each assignment. The reader takes sole responsibility for implementation of material from this book. The implied warranties of merchantability and fitness of purpose and all other warranties, whether expressed or implied, are excluded from this transaction, and shall not apply to this book. None of the authors, editors, reviewers, nor publisher shall be liable for any indirect, special, or consequential damages.

CHAPTER 1

Introduction to Financial Valuation

There is an ever-increasing need for financial valuation services pertaining to nonpublic companies and subsidiaries, divisions, or segments of public companies. Many textbooks discuss valuation issues pertaining to public companies and their stock prices. Much of that information also can be used to value nonpublic companies. However, over the past 20 years or so, specific techniques, methods, applications, and models applicable to nonpublic companies have emerged. This text addresses this body of knowledge.

Valuation has many subjective factors, which leads to many differences of opinion. This book presents the consensus view of 25 of the leading valuation analysts (analysts) in the country.

Much of the notation system used in this text is that used by Shannon Pratt in his various publications,[1] a system adopted by the American Institute of Certified Public Accountants (AICPA), the National Association of Certified Valuation Analysts (NACVA) and the American Society of Appraisers (ASA) in their business valuation courses.

As a quick reference guide to important factors and concepts, numerous "ValTips" are found throughout the volume. These ValTips are intended to provide guidance and insight on handling key issues as well as to provide practice ideas.

WHO VALUES BUSINESSES?

Many providers and/or users of business valuation services exist. The AICPA unofficially estimates that tens of thousands of Certified Public Accountants (CPAs) perform business valuations on at least a part-time basis. Many of these are also full-time valuation practitioners. Several of the national accounting firms also have valuation services groups. There are also analysts and appraisers who practice out of various types of organizations, including appraisal companies, valuation boutiques, and consulting firms. Valuations are also performed by investment bankers, usually as part of a transaction. Owners and financial executives also participate in valuations of their companies or segments of their companies. This book attempts to provide a sound understanding of financial valuation for all users and providers of valuation services and to advance consensus views on some of the more troublesome aspects of valuation science.

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[1] Shannon P. Pratt, *Cost of Capital: Estimation and Applications* (New York: John Wiley & Sons, Inc., 1998), pp. xxv–xxviii.

PURPOSE OF A VALUATION

Businesses or their assets are valued for a variety of reasons. Some of the more common purposes for valuation are:

- Mergers and acquisitions
- Litigation and ownership disputes
- Estate, gift, and income tax
- Marital dissolution
- Dissenters' rights cases
- Shareholder oppression cases
- Employee Stock Ownership Plans (ESOPs)
- Financial reporting
- Allocation of purchase price
- Goodwill impairment
- Buy/sell agreements
- Family limited partnerships
- Reorganizations and bankruptcies
- Recapitalizations
- Business planning
- Stock option plans
- Compensation

Various types of businesses can be valued:

- C corporations
- S corporations
- Limited liability companies
- Limited liability partnerships
- Limited partnerships
- General partnerships
- Trusts
- Sole proprietorships
- Undivided interests

The types of interest within each of the organizational structures can vary as well. The types of interest that can be valued include:

- 100 percent controlling interest
- Majority interests that possess control
- Majority interests that do not possess control
- 50 percent interest
- Dominant minority interest
- Nondominant minority interest

The individual ownership characteristics of any interest in a company being valued must also be evaluated. As such, it is important for an analyst to review corporate documents, including articles of incorporation, by-laws, buy/sell agreements, restrictive agreements, and the like. A review of these documents along

with an understanding of state rights will indicate any particular rights that the interest enjoys.

PROFESSIONAL VALUATION ORGANIZATIONS

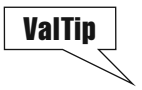
Four U.S. professional organizations, listed alphabetically below, provide assistance to their members in valuing businesses, particularly closely held business interests:

1. American Institute of Certified Public Accountants (AICPA)
2. American Society of Appraisers (ASA)
3. Institute of Business Appraisers (IBA)
4. National Association of Certified Valuation Analysts (NACVA)

Each of these organizations is briefly described in Chapter 10.

STANDARDS OF VALUE

Before analysts can attempt to value a business, they must fully understand the standard of value that applies.



Relying on the wrong standard of value can result in a very different value and, in a dispute setting, the possible dismissal of the value altogether.

There are five standards of value:

1. Fair market value (FMV)
2. Investment value
3. Intrinsic value
4. Fair value (state rights)
5. Fair value (financial reporting)

FAIR MARKET VALUE

The U.S. Treasury regulations define fair market value as "the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts."[2]

[2] Treasury Regulation 20.2031-1.

Fair market value for tax purposes also assumes a hypothetical willing buyer and a hypothetical willing seller. This is in contrast to investment value, which identifies a particular buyer or seller and the attributes that buyer or seller brings to a transaction. Fair market value also assumes an arm's-length deal and that the buyer and seller are able and willing. This is not the same as the definition of market value, an often-used real estate term. For example, the Uniform Standards of Professional Appraisal Practice (USPAP) defines market value as "a type of value, stated as an opinion, that presumes the transfer of a property (i.e., a right of ownership or a bundle of such rights), as of a certain date, under specific conditions set forth in the definition of the term identified by the appraiser as applicable in an appraisal."

Internal Revenue Service Revenue Ruling 59-60 defines fair market value as "the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts. Court decisions frequently state in addition that the hypothetical buyer and seller are assumed to be able, as well as willing, to trade and to be well informed about the property and concerning the market for such property."[3]

Although many states use the term "fair market value" in their marital dissolution cases, the definition of fair market value may vary from state to state and will not necessarily be the same definition as in the tax area.

The *International Glossary of Business Valuation Terms (International Glossary)* represents the collective wisdom of the American Institute of Certified Public Accountants, American Society of Appraisers, Canadian Institute of Chartered Business Valuators, National Association of Certified Valuation Analysts and the Institute of Business Appraisers. See the addendum at the end of this chapter for the complete *International Glossary*. Its definition of fair market value reads: "The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms-length in an open and unrestricted market, where neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts."

This is obviously very similar to the definition of fair market value in the tax area. Fair market value is used most often in tax situations. It is also used in many buy/sell agreements and marital dissolution situations. Unless otherwise noted, the standard of value discussed throughout this text is fair market value.

[3] Rev. Rul. 59-60,159-1 CB 237.

INVESTMENT VALUE

The *International Glossary* defines investment value as "The value to a particular investor based on individual investment requirements and expectations." Investment value is the value to a particular investor, which reflects the particular and specific attributes of that investor. The best example would be an auction setting for a company in which there are five different bidders attempting to purchase the company. More than likely each of the bidders will offer a different price because the prices are based on the individual outlook and synergies that each bidder brings to the transaction. Investment value may also reflect more of the risk of a particular investor than the market consensus of the risk of the investment.

INTRINSIC VALUE

Intrinsic value is based on fundamental analyses of companies, particularly publicly traded companies. It is often what is taught in university financial courses and presented in finance textbooks. Jeffrey C. Hooke, in his text *Security Analysis on Wall Street: A Comprehensive Guide to Today's Valuation Methods,* states that "Under the intrinsic value method, future dividends are derived from earnings forecasts and then discounted to the present, thereby establishing a present value for the stock. If the stock is trading at a price lower than this calculation, it is a 'buy'; if the market price is higher than the intrinsic value, the stock is a 'sell.'"[4]

The AICPA, in its course Fundamentals of Business Valuation—Part 1, defines intrinsic value as the "Amount an investor considers to be the 'true' or 'real' worth of an item, based on an evaluation of available facts. It is sometimes called *fundamental value*. It is an analytical judgment of value based on perceived *characteristics inherent in the investment* (not characteristic peculiar to any one investor)."[5] Intrinsic value is not applied often in valuations of nonpublic companies.

FAIR VALUE (STATE RIGHTS)

The common definition of fair value is that from the Uniform Business Corporation Act, which defines it as "the value of the shares immediately before the effectuation of the corporate action to which the dissenter objects, excluding any appreciation or depreciation in anticipation of the corporate action."[6] Fair value is the standard of value for state actions, including dissenting rights cases and shareholder oppression cases. Its definition and application can vary from state to state. As such, the definition of fair value in one state may be quite different from the definition of fair value in another state. Analysts must understand both the definition and the application of fair value in the particular state that the action is taking place in.

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[4] Jeffrey C. Hooke, *Security Analysis on Wall Street: A Comprehensive Guide to Today's Valuation Methods* (New York: John Wiley & Sons, Inc., 1998), p. 14.

[5] David P. Adams III, David M. Bishop, Robert J. Grossman, James R. Hitchner, Eva M. Lang, Shannon P. Pratt, and Robert C. Rosenthal, Fundamentals of Business Valuation—Part 1 (American Institute of Certified Public Accountants, 2000), pp. 1–18.

[6] Georgia Dissenters Right Statute.

FAIR VALUE (FINANCIAL REPORTING)

Fair value has been the standard of value for financial reporting for many years. It is the standard of value in many Statements of Financial Accounting Standards (SFAS) as issued by the Financial Accounting Standards Board (FASB). The most recent definition of fair value is from SFAS 141 and 142: "The amount at which an asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale."[7]

Fair value for financial reporting purposes often has been equated with fair market value. However, in certain situations, fair value for a company or a segment of a company would include synergies within a transaction. As such, in those situations, fair value may have more aspects of investment value than fair market value. In other situations, such as the value of certain individual assets, synergies may not be included, and fair value would be more similar to fair market value. It is important for the analyst to look for guidance from FASB and the Securities and Exchange Commission (SEC) in terms of their views on fair value and its applications.

PREMISE OF VALUE

There are two premises of value, going concern value and liquidation value. *The International Glossary* defines premise of value as "An assumption regarding the most likely set of transactional circumstances that may be applicable to the subject valuation, e.g., going concern, liquidation." It defines going concern value as "The value of a business enterprise that is expected to continue to operate into the future. The intangible elements of going concern value result from factors such as having a trained work force, an operational plant, and the necessary licenses, systems, and procedures in place."

There are two types of liquidation value, orderly liquidation and forced liquidation. *The International Glossary* defines orderly liquidation value as "Liquidation value at which the asset or assets are sold over a reasonable period of time to maximize proceeds received." It defines forced liquidation value as "Liquidation value at which the asset or assets are sold as quickly as possible, such as at an auction." It also defines liquidation value as "The net amount that can be realized if the business is terminated and the assets are sold piecemeal. Liquidation can be either 'orderly' or 'forced.'"

ValTip

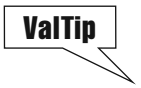
Some companies are worth more dead than alive. It is important for the analyst, particularly when valuing an entire company, to determine if the going concern value exceeds the liquidation value. For a minority interest, there are situations where the going concern value is less than the liquidation value. However, the minority shareholder cannot force a liquidation if the controlling shareholder desires to continue the business as a going concern.

[7] Statements of Financial Accounting Standards No.142, "Goodwill and Other Intangible Assets," Financial Accounting Standards Board of the Financial Accounting Foundation, June 2001, p. 117.

PRINCIPLES OF APPRAISAL PRACTICE

The modern financial valuation body of knowledge is based to some extent on the evolution of appraisal practices. The ASA's seminal text, *Appraisal Principles and Procedures,* discusses the general characteristic of value.

> It is a characteristic of *value,* in the sense that the word is understood in appraisal practice, that it is expressible in terms of a single lump sum of money considered as payable or expended at a particular point in time in exchange for property, i.e., the right to receive future benefits as at that particular time – point. The amount of the lump sum of money, in any particular instance, is exactly equivalent to the right to receive the particular future benefits encompassed in the property under consideration. In this, *value* differs from *price* or *cost*. Price and cost refer to an amount of money asked or actually paid for a property, and this may be more or less than its value.[8]



Price and cost can equal value but don't necessarily have to equal value. Furthermore, value is future looking. Although historical information can be used to set a value, the expectation of future economic benefits is the primary value driver. Investors buy tomorrow's cash flow, not yesterday's or even today's.

DATES

All valuations are done as of a single date. It is important that the users of valuations understand this fact. *The International Glossary* defines the valuation date as, "The specific point in time as of which the valuator's opinion of value applies (also referred to as 'Effective Date' or 'Appraisal Date')."

APPROACHES TO VALUE

There are only three approaches to value any asset, business or business interest:

1. The income approach
2. The market approach
3. The asset approach

There are no other approaches to value. However, there are numerous methods within each one of the approaches that the analyst may consider in performing a

[8] Henry A. Babcock, *Appraisal Principles and Procedures* (Washington, DC: American Society of Appraisers, 1994), p. 95.

valuation. For example, under the income approach, the analyst can use a discounted cash flow method or a capitalized cash flow method. Each of these methods also can be prepared on a direct equity method or an invested capital method. In the market approach, the analyst can apply guideline public company multiples or multiples derived from transactions both public and private. In the asset approach, the analyst often must choose between valuing just tangible assets, individual intangible assets or all intangible assets as a collective group. Various methodologies exist for each one of these choices.

All three approaches should be considered in each valuation. However, it is not common to use all three approaches in each valuation. For example, the asset approach is used less often in valuing operating companies, since the time and cost involved in performing valuations of intangible assets do not warrant the increased level of accuracy, if any, provided by the cost approach. Specific intangible asset values are often excluded due to the fact that intangible asset values are captured in the proper application of the income and market approaches, which would provide, in most circumstances, a ceiling on the aggregate intangible asset values.

VALUATION PROCEDURES

Numerous procedures and factors must be considered in performing a business valuation. However, they can generally be classified into the following areas:

- Understand the purpose of the engagement
- Understand who the client is
- Understand the client's use of the valuation
- Determine the standard of value
- Determine the premise of value
- Determine the users of the value
- Determine the interest to be valued
- Ascertain whether discounts and/or premiums are to be considered
- Analyze the company's financial information
- Gather information about the company
- Gather information about the industry and economy
- Consider all approaches of value and select the most appropriate
- Apply the approaches to value through the various methodologies
- Reconcile the values
- Apply discounts and premiums if applicable
- Write the report if applicable

All of these steps are discussed throughout the book.

SUMMARY

Valuation, by its very nature, contains many controversial issues. We address many of these issues throughout this book, highlighting them through the ValTips. These issues are further addressed in Chapter 24, *Controversial Issues*, which presents these issues as "Valuation Views" (VV) in the sequence of an actual report.

The valuation of business enterprises and business assets is well-founded in academic publications and empirical studies. The use of public company information

has provided the foundation for the analysis of business valuation. The biggest difference between valuing investments in public companies and nonpublic businesses is the lack of information. The application of recognized valuation methodology and rigorous analysis of the private company provides the foundation for business valuation. This book presents state of the art methods for the valuation of closely-held businesses and other assets as it has evolved.

ADDENDUM

International Glossary of Business Valuation Terms

To enhance and sustain the quality of business valuations for the benefit of the profession and its clientele, the below identified societies and organizations have adopted the definitions for the terms included in this glossary.

The performance of business valuation services requires a high degree of skill and imposes upon the valuation professional a duty to communicate the valuation process and conclusion in a manner that is clear and not misleading. This duty is advanced through the use of terms whose meanings are clearly established and consistently applied throughout the profession.

If, in the opinion of the business valuation professional, one or more of these terms needs to be used in a manner that materially departs from the enclosed definitions, it is recommended that the term be defined as used within that valuation engagement.

This glossary has been developed to provide guidance to business valuation practitioners by further memorializing the body of knowledge that constitutes the competent and careful determination of value and, more particularly, the communication of how that value was determined.

Departure from this glossary is not intended to provide a basis for civil liability and should not be presumed to create evidence that any duty has been breached.

American Institute of Certified Public Accountants
American Society of Appraisers
Canadian Institute of Chartered Business Valuators
National Association of Certified Valuation Analysts
The Institute of Business Appraisers

Adjusted Book Value Method—a method within the asset approach whereby all assets and liabilities (including off-balance sheet, intangible, and contingent) are adjusted to their fair market values (NOTE: In Canada on a going concern basis).

Adjusted Net Asset Method—see **Adjusted Book Value Method**.

Appraisal—see **Valuation**.

Appraisal Approach—see **Valuation Approach**.

Appraisal Date—see **Valuation Date**.

Appraisal Method—see **Valuation Method**.

Appraisal Procedure—see **Valuation Procedure**.

Arbitrage Pricing Theory—a multivariate model for estimating the cost of equity capital, which incorporates several systematic risk factors.

Asset (Asset-Based) Approach—a general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities.

Beta—a measure of systematic risk of a stock; the tendency of a stock's price to correlate with changes in a specific index.

Blockage Discount—an amount or percentage deducted from the current market price of a publicly traded stock to reflect the decrease in the per share value of a block of stock that is of a size that could not be sold in a reasonable period of time given normal trading volume.

Book Value—see **Net Book Value**.

Business—see **Business Enterprise**.

Business Enterprise—a commercial, industrial, service, or investment entity (or a combination thereof) pursuing an economic activity.

Business Risk—the degree of uncertainty of realizing expected future returns of the business resulting from factors other than financial leverage. See **Financial Risk**.

Business Valuation—the act or process of determining the value of a business enterprise or ownership interest therein.

Capital Asset Pricing Model (CAPM)—a model in which the cost of capital for any stock or portfolio of stocks equals a risk-free rate plus a risk premium that is proportionate to the systematic risk of the stock or portfolio.

Capitalization—a conversion of a single period of economic benefits into value.

Capitalization Factor—any multiple or divisor used to convert anticipated economic benefits of a single period into value.

Capitalization of Earnings Method—a method within the income approach whereby economic benefits for a representative single period are converted to value through division by a capitalization rate.

Capitalization Rate—any divisor (usually expressed as a percentage) used to convert anticipated economic benefits of a single period into value.

Capital Structure—the composition of the invested capital of a business enterprise, the mix of debt and equity financing.

Cash Flow—cash that is generated over a period of time by an asset, group of assets, or business enterprise. It may be used in a general sense to encompass various levels of specifically defined cash flows. When the term is used, it should be supplemented by a qualifier (for example, "discretionary" or "operating") and a specific definition in the given valuation context.

Common Size Statements—financial statements in which each line is expressed as a percentage of the total. On the balance sheet, each line item is shown as a percentage of total assets, and on the income statement, each item is expressed as a percentage of sales.

Control—the power to direct the management and policies of a business enterprise.

Control Premium—an amount or a percentage by which the pro rata value of a controlling interest exceeds the pro rata value of a non-controlling interest in a business enterprise, to reflect the power of control.

Cost Approach—a general way of determining a value indication of an individual asset by quantifying the amount of money required to replace the future service capability of that asset.

Cost of Capital—the expected rate of return that the market requires in order to attract funds to a particular investment.

Debt-Free—*we discourage the use of this term.* See **Invested Capital.**

Discount for Lack of Control—an amount or percentage deducted from the pro rata share of value of 100 percent of an equity interest in a business to reflect the absence of some or all of the powers of control.

Discount for Lack of Marketability—an amount or percentage deducted from the value of an ownership interest to reflect the relative absence of marketability.

Discount for Lack of Voting Rights—an amount or percentage deducted from the per share value of a minority interest voting share to reflect the absence of voting rights.

Discount Rate—a rate of return used to convert a future monetary sum into present value.

Discounted Cash Flow Method—a method within the income approach whereby the present value of future expected net cash flows is calculated using a discount rate.

Discounted Future Earnings Method—a method within the income approach whereby the present value of future expected economic benefits is calculated using a discount rate.

Economic Benefits—inflows such as revenues, net income, net cash flows, etc.

Economic Life—the period of time over which property may generate economic benefits.

Effective Date—see **Valuation Date.**

Enterprise—see **Business Enterprise.**

Equity—the owner's interest in property after deduction of all liabilities.

Equity Net Cash Flows—those cash flows available to pay out to equity holders (in the form of dividends) after funding operations of the business enterprise, making necessary capital investments, and increasing or decreasing debt financing.

Equity Risk Premium—a rate of return added to a risk- free rate to reflect the additional risk of equity instruments over risk free instruments (a component of the cost of equity capital or equity discount rate).

Excess Earnings—that amount of anticipated economic benefits that exceeds an appropriate rate of return on the value of a selected asset base (often net tangible assets) used to generate those anticipated economic benefits.

Excess Earnings Method—a specific way of determining a value indication of a business, business ownership interest, or security determined as the sum of a) the value of the assets derived by capitalizing excess earnings and b) the value of the selected asset base. Also frequently used to value intangible assets. See **Excess Earnings.**

Fair Market Value—the price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a

hypothetical willing and able seller, acting at arm's length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts. (NOTE: In Canada, the term "price" should be replaced with the term "highest price.")

Fairness Opinion—an opinion as to whether or not the consideration in a transaction is fair from a financial point of view.

Financial Risk—the degree of uncertainty of realizing expected future returns of the business resulting from financial leverage. See **Business Risk**.

Forced Liquidation Value—liquidation value, at which the asset or assets are sold as quickly as possible, such as at an auction.

Free Cash Flows—*we discourage the use of this term.* See **Net Cash Flows**.

Going Concern—an ongoing operating business enterprise.

Going Concern Value—the value of a business enterprise that is expected to continue to operate into the future. The intangible elements of Going Concern Value result from factors such as having a trained work force, an operational plant, and the necessary licenses, systems, and procedures in place.

Goodwill—that intangible asset arising as a result of name, reputation, customer loyalty, location, products, and similar factors not separately identified.

Goodwill Value—the value attributable to goodwill.

Guideline Public Company Method—a method within the market approach whereby market multiples are derived from market prices of stocks of companies that are engaged in the same or similar lines of business, and that are actively traded on a free and open market.

Income (Income -Based) Approach—a general way of determining a value indication of a business, business ownership interest, security, or intangible asset using one or more methods that convert anticipated economic benefits into a present single amount.

Intangible Assets—non-physical assets such as franchises, trademarks, patents, copyrights, goodwill, equities, mineral rights, securities and contracts (as distinguished from physical assets) that grant rights and privileges, and have value for the owner.

Internal Rate of Return—a discount rate at which the present value of the future cash flows of the investment equals the cost of the investment.

Intrinsic Value—the value that an investor considers, on the basis of an evaluation or available facts, to be the "true" or "real" value that will become the market value when other investors reach the same conclusion. When the term applies to options, it is the difference between the exercise price or strike price of an option and the market value of the underlying security.

Invested Capital—the sum of equity and debt in a business enterprise. Debt is typically a) all interest-bearing debt or b) long-term interest-bearing debt. When the term is used, it should be supplemented by a specific definition in the given valuation context.

Invested Capital Net Cash Flows—those cash flows available to pay out to equity holders (in the form of dividends) and debt investors (in the form of principal and interest) after funding operations of the business enterprise and making necessary capital investments.

Investment Risk—the degree of uncertainty as to the realization of expected returns.

Investment Value—the value to a particular investor based on individual investment requirements and expectations. (NOTE: in Canada, the term used is "Value to the Owner.")

Key Person Discount—an amount or percentage deducted from the value of an ownership interest to reflect the reduction in value resulting from the actual or potential loss of a key person in a business enterprise.

Levered Beta—the beta reflecting a capital structure that includes debt.

Limited Appraisal—the act or process of determining the value of a business, business ownership interest, security, or intangible asset with limitations in analyses, procedures, or scope.

Liquidity—the ability to quickly convert property to cash or pay a liability.

Liquidation Value—the net amount that would be realized if the business is terminated and the assets are sold piecemeal. Liquidation can be either "orderly" or "forced."

Majority Control—the degree of control provided by a majority position.

Majority Interest—an ownership interest greater than 50 percent of the voting interest in a business enterprise.

Market (Market-Based) Approach—a general way of determining a value indication of a business, business ownership interest, security, or intangible asset by using one or more methods that compare the subject to similar businesses, business ownership interests, securities, or intangible assets that have been sold.

Market Capitalization of Equity—the share price of a publicly traded stock multiplied by the number of shares outstanding.

Market Capitalization of Invested Capital—the market capitalization of equity plus the market value of the debt component of invested capital.

Market Multiple—the market value of a company's stock or invested capital divided by a company measure (such as economic benefits, number of customers).

Marketability—the ability to quickly convert property to cash at minimal cost.

Marketability Discount—see **Discount for Lack of Marketability**.

Merger and Acquisition Method—a method within the market approach whereby pricing multiples are derived from transactions of significant interests in companies engaged in the same or similar lines of business.

Mid-Year Discounting—a convention used in the Discounted Future Earnings Method that reflects economic benefits being generated at midyear, approximating the effect of economic benefits being generated evenly throughout the year.

Minority Discount—a discount for lack of control applicable to a minority interest.

Minority Interest—an ownership interest less than 50 percent of the voting interest in a business enterprise.

Multiple—the inverse of the capitalization rate.

Net Book Value—with respect to a business enterprise, the difference between total assets (net of accumulated depreciation, depletion, and amortization) and total liabilities as they appear on the balance sheet (synonymous with Shareholder's Equity). With respect to a specific asset, the capitalized cost less accumulated amortization or depreciation as it appears on the books of account of the business enterprise.

Net Cash Flows—when the term is used, it should be supplemented by a qualifier. See **Equity Net Cash Flows** and **Invested Capital Net Cash Flows**.

Net Present Value—the value, as of a specified date, of future cash inflows less all cash outflows (including the cost of investment) calculated using an appropriate discount rate.

Net Tangible Asset Value—the value of the business enterprise's tangible assets (excluding excess assets and non-operating assets) minus the value of its liabilities.

Non-Operating Assets—assets not necessary to ongoing operations of the business enterprise. (NOTE: in Canada, the term used is "Redundant Assets.")

Normalized Earnings—economic benefits adjusted for nonrecurring, noneconomic, or other unusual items to eliminate anomalies and/or facilitate comparisons.

Normalized Financial Statements—financial statements adjusted for nonoperating assets and liabilities and/or for nonrecurring, noneconomic, or other unusual items to eliminate anomalies and/or facilitate comparisons.

Orderly Liquidation Value—liquidation value at which the asset or assets are sold over a reasonable period of time to maximize proceeds received.

Premise of Value—an assumption regarding the most likely set of transactional circumstances that may be applicable to the subject valuation; e.g. going concern, liquidation.

Present Value—the value, as of a specified date, of future economic benefits and/or proceeds from sale, calculated using an appropriate discount rate.

Portfolio Discount—an amount or percentage deducted from the value of a business enterprise to reflect the fact that it owns dissimilar operations or assets that do not fit well together.

Price/Earnings Multiple—the price of a share of stock divided by its earnings per share.

Rate of Return—an amount of income (loss) and/or change in value realized or anticipated on an investment, expressed as a percentage of that investment.

Redundant Assets—see **Non-Operating Assets**.

Report Date—the date conclusions are transmitted to the client.

Replacement Cost New—the current cost of a similar new property having the nearest equivalent utility to the property being valued.

Reproduction Cost New—the current cost of an identical new property.

Required Rate of Return—the minimum rate of return acceptable by investors before they will commit money to an investment at a given level of risk.

Residual Value—the value as of the end of the discrete projection period in a discounted future earnings model.

Return on Equity—the amount, expressed as a percentage, earned on a company's common equity for a given period.

Return on Investment—see **Return on Invested Capital** and **Return on Equity**.

Return on Invested Capital—the amount, expressed as a percentage, earned on a company's total capital for a given period.

Risk-Free Rate—the rate of return available in the market on an investment free of default risk.

Risk Premium—a rate of return added to a risk-free rate to reflect risk.

Rule of Thumb—a mathematical formula developed from the relationship between price and certain variables based on experience, observation, hearsay, or a combination of these; usually industry specific.

Special Interest Purchasers—acquirers who believe they can enjoy post-acquisition economies of scale, synergies, or strategic advantages by combining the acquired business interest with their own.

Standard of Value—the identification of the type of value being used in a specific engagement; e.g. fair market value, fair value, investment value.

Sustaining Capital Reinvestment—the periodic capital outlay required to maintain operations at existing levels, net of the tax shield available from such outlays.

Systematic Risk—the risk that is common to all risky securities and cannot be eliminated through diversification. The measure of systematic risk in stocks is the beta coefficient.

Tangible Assets—physical assets (such as cash, accounts receivable, inventory, property, plant and equipment, etc.).

Terminal Value—see **Residual Value**.

Transaction Method—see **Merger and Acquisition Method**.

Unlevered Beta—the beta reflecting a capital structure without debt.

Unsystematic Risk—the risk specific to an individual security that can be avoided through diversification.

Valuation—the act or process of determining the value of a business, business ownership interest, security, or intangible asset.

Valuation Approach—a general way of determining a value indication of a business, business ownership interest, security, or intangible asset using one or more valuation methods.

Valuation Date—the specific point in time as of which the valuator's opinion of value applies (also referred to as "Effective Date" or "Appraisal Date").

Valuation Method—within approaches, a specific way to determine value.

Valuation Procedure—the act, manner, and technique of performing the steps of an appraisal method.

Valuation Ratio—a fraction in which a value or price serves as the numerator and financial, operating, or physical data serves as the denominator.

Value to the Owner—see **Investment Value**.

Voting Control—*de jure* control of a business enterprise.

Weighted Average Cost of Capital (WACC)—the cost of capital (discount rate) determined by the weighted average, at market value, of the cost of all financing sources in the business enterprise's capital structure.

CHAPTER 2

Research and Its Presentation

A significant part of the valuation process involves identifying and incorporating both internal and external material into the valuation report. Internal information is generated by the subject company and includes items such as budgets, marketing plans, and projections. Information gathered and prepared by an outside firm specifically for and about the company is also considered to be internal information. This information may include financial statements, audit reports, and market analyses. External information is generated by sources outside the subject company, such as trade associations, newspapers, and magazines. An example of external information would be a trade journal article about trends in the subject company's industry.

OBTAINING INTERNAL INFORMATION

Most valuation engagements begin with the collection of data from the subject company. Typically, analysts gather information on the company by reviewing documents, visiting all or some of the company's operations and by interviewing management.

ValTip

Because of the complexity of the data-assembling process, many professionals use checklists that detail the types of information they are seeking. Addendum 1 presents a sample list of documents requested and questions to be asked in the course of a valuation engagement. Addendum 2 is a sample management interview questionnaire. Both addenda are at the end of this chapter. Using these tools can help ensure that the Valuation Professional covers the necessary bases in gathering internal information.

A DIRECTIVE FROM THE INTERNAL REVENUE SERVICE

Why do we need to consider external information? Why not just base the valuation on internal information generated by the company's management? Besides the obvi-

ous need to consider outside influences on a company, another reason is because the Internal Revenue Service (IRS) has specifically instructed valuation professionals to examine external information as part of the valuation process.

In Revenue Ruling 59-60, the IRS lays out eight factors to consider when performing a valuation for estate and gift taxes. Factor 2 and Factor 8 deal specifically with external information.

Factor 2 instructs the valuation analyst to consider: "the economic outlook in general and the condition and outlook of the specific industry in particular." Revenue Ruling 59-60 goes on to say that:

> A sound appraisal of a closely-held stock must consider current and prospective economic conditions as of the date of appraisal, both in the national economy and in the industry or industries with which the corporation is allied. It is important to know that the company is more or less successful than its competitors in the same industry, or that it is maintaining a stable position with respect to competitors. Equal or greater significance may attach to the ability of the industry with which the company is allied to compete with other industries. Prospective competition which has not been a factor in prior years should be given careful attention.

Factor 8 focuses on the necessity of comparing the subject company to similar companies: "The market price of stocks of corporations engaged in the same or a similar line of business having their stocks actively traded in a free and open market, either on an exchange or over the counter." Revenue Ruling 59-60 goes into some detail on this issue:

> In valuing unlisted securities the value of stock or securities of corporations engaged in the same or a similar line of business which are listed on an exchange should be taken into consideration along with all other factors. An important consideration is that the corporations to be used for comparisons have capital stocks, which are actively traded by the public . . . . stocks listed on an exchange are to be considered first. However, if sufficient comparable companies whose stocks are listed on an exchange cannot be found, other comparable companies which have stocks actively traded on the over-the-counter market also may be used. The essential factor is that . . . . there is evidence of an active, free public market for the stock as of the valuation date. In selecting corporations for comparative purposes, care should be taken to use only comparable companies . . . . consideration must be given to other relevant factors in order that the most valid comparison possible will be obtained.

Following the outline of Revenue Ruling 59-60, most external data used in a closely held company valuation falls into three areas:

1. *Economic Data*. Economic data includes information on national economic conditions and local market conditions. It encompasses the entire macroeconomic environment, including demographic and social trends, technological issues, and the political/regulatory environment.

2. *Industry Data*. Industry data should focus on the competitive structure of the industry and its prospects for growth. The relative position or market share of the subject company in the market area and the subject company's financial performance as compared to industry standards are important considerations.
3. *Guideline Publicly Traded Company and Guideline Company Transaction Data*. Guideline information is important to understanding the subject company's relative performance. Collecting guideline information involves identifying companies similar to the subject company, locating pricing and financial data, and identifying, if appropriate, transactions involving the sales of controlling interests in similar companies. The analysis of guideline publicly traded company information and guideline company transaction data is covered in detail in Chapter 6.

The remainder of this chapter focuses on techniques that will help the valuation analyst locate and analyze information in these three areas and identifies some specific sources of economic, industry, and guideline company data.

RESEARCH TECHNIQUES AND PLANNING THE SEARCH

Researching external information for inclusion in a valuation report has become easier with the advent of the Internet and other electronic resources. However, the proliferation of resources makes it all the more important to have good search skills to prevent spending unnecessary time in unproductive searches.

ValTip

One of the biggest mistakes the valuation analyst can make in valuation research is to start looking for information without a plan.

The few minutes it takes to plan a search can save hours and can greatly enhance its effectiveness. Four considerations will help analysts develop the search plan:

1. D*etermine what information is needed*. Define the topic. Consider the goals to be reached and how much information is needed to achieve them. Is a projection of growth in the restaurant industry for the next five years the only item needed, or is there also a need for a detailed analysis of current issues in the industry? Knowing what you hope to accomplish will keep you from pursuing tangential issues.

   To begin analyzing a topic, start by identifying the key words or central concepts in the research question. Write down a number of key terms related to the topic, including synonyms and words describing related topics. Because there are so many ways to express any idea, the trick is to find terms that are consistent with the way databases organize information.

   For example, if you are valuing a company that collects and disposes of residential garbage, you might consider a key phrase to be "garbage collection."

However, many databases classify articles about this type of company under the heading "waste haulers."

Develop a standard research form to use as you define a search strategy. Addendum 3 at the end of this chapter contains a sample Industry Research Form. An industry research form might include the following headings:

- *Industry Name*. Be as specific as possible in naming the industry described to you by the subject company's management. "The wholesale home appliance industry, primarily laundry appliances" is more meaningful than "the appliance industry."
- *Industry Codes*. Identify the Standard Industrial Classification (SIC) code and/or the North American Industry Classification System (NAICS) code. (Consult a copy of the SIC Code and NAICS Code manual at a local library or search the manuals on the Internet at *www.osha.gov/oshstats/sicser.html* and *www.naics.com/search.htm* respectively.)
- *Keywords*. Brainstorm possible key terms. Ask management at the subject company to assist you in learning industry terms. Supplement this list as you locate other resources that contain new or unfamiliar terms.

2. *Determine where you are going to look*. Consider who might produce the type of information you have defined in step 1. While this may seem simple, it requires an understanding of the information industry and the types of publications and resources that are available. This type of knowledge is developed over time.

   If you are looking for information on a particular industry, a trade association may be a good place to start. If you are looking for information on valuation multiples for sales of waste haulers, a business broker specializing in waste haulers can be a great source.

   Would the information you are seeking be a likely topic for an article in a newspaper or magazine? If so, consider using a periodicals database.

   Periodical databases are the electronic equivalent of the *Readers' Guide to Periodical Literature* found in every library and dog-eared by generations of students. The *Reader's Guide*, published by H. W. Wilson Co., indexes approximately 300 general interest periodicals. Newer, more extensive electronic databases index thousands of periodicals. For example, FACTIVA indexes 6,000 newswires, newspapers, magazines, and trade journals. The Northern Light Special Collection contains thousands of articles from various, primarily business-related, periodicals. It is available on the Northern Light web site at *www.northernlight.com/power.html*.

   Information services, described later in this chapter, offer access to periodical databases and other databases containing financial and/or legal information. Information services with extensive periodicals databases include Dialog and Lexis-Nexis. Other possible sources are:

   - *Trade Associations*. Determine if there are trade associations for the industry you are researching. Most libraries have trade association directories, such as the three-volume *Encyclopedia of Associations* published by Gale Research, Inc., that contains information on more than 23,000 U.S. asso-

ciations. A less comprehensive but more convenient source is the online Gateway to Associations search engine at *http://info.asaenet.org/gateway/OnlineAssocSlist.html*. Be sure to ask the management of the subject company if they belong to a trade association and if they have any association materials that you can review.

- *Trade Publications.* Are there trade journals or specialty publications targeted at this industry? For example, *Appliance Magazine* is the journal of global appliance manufacturers, and *Engineering News Record* is a great source for information on engineering firms. Identify these publications by asking the management of the subject company about the periodicals they read, by searching the aforementioned periodical databases, and by reviewing lists of journals in a directory such as MediaFinder (*www.mediafinder.com*) or Publist (*www.publist.com*).
- *Other Resources.* Can you identify industry analysts at major brokerage firms? Which are the large public companies in the industry?

ValTip

The 10-Ks of public companies often have detailed analyses of the industry.

Do not overlook industry profiles prepared by industry analysts. These are discussed in more detail later in this chapter and can be excellent sources of industry information. The *Standard and Poor's Industry Surveys* publication is available at most larger libraries and contains industry information and economic trends on 52 major U.S. industries. First Research reports are available online at *www.1stresearch.com* and cover more than 125 industries with detailed strengths/weaknesses/opportunities/threats (SWOT) analyses and links to sources and additional information.

3. *Developing a Search Strategy.* Now that you have defined your search and identified some sources of information, how can you most efficiently find the information you need? A number of printed documents still are great sources for business valuation research, so do not rule out local libraries or nearby universities, or your firm's in-house library.

   Using the Internet to search for business valuation information is potentially one of the most efficient ways, depending on the skill of the researcher. Understanding the basic elements of search logic common to most systems enables analysts to greatly enhance their ability to find information on the Internet and within electronic databases.

   Boolean logic is the basic logic system used for online searching. Boolean logic involves the manipulation of true-and-false values. This system was developed by mathematician George Boole in the mid-1800s to permit algebraic manipulation of logical statements.

   Boolean logic uses three logical operators (Boolean operators): AND, OR, and NOT. The AND connector means that all search terms connected by the

AND must be present. For example, the search "business and valuation" would return a list of documents with both words somewhere in the record. The OR connector requires either term to be present. (This is the default for many Internet search engines). The search "trends OR projections" would find records containing either or both of those words. The NOT connector returns records where the designated term does not appear. The search "compensation NOT workers" eliminates records that contain the word "workers" but includes documents that contain the word "compensation." The NOT connector can be a valuable tool when you are searching for salary information and want to eliminate documents about workers' compensation insurance.

Another helpful search logic tool is truncation. Truncation, also known as wild card searching, allows searching of word variations. Wild cards can vary from database to database but usually are either the "*" or "?"; for example, searching on "discount*" will find records containing the terms "discount," "discounts," "discounting," and "discounted."

4. *Evaluate Information.* The amount of information available on the Internet is staggering, and it varies widely in its accuracy, reliability, and value. Anyone can place a page on the World Wide Web. Unlike most traditional media, no one has to approve the content before it is made public. It is up to the researcher to evaluate information found on the Internet.

   Sometimes evaluating information is fairly easy. Official data from government and public corporate sites are generally reliable. Many government agencies digitize their printed reports so that you may access online the same information you could get from the print version of the document. If you are dealing with less familiar sources, determining whether the information is legitimate can require more analysis.

   Ask the following questions to determine if the information found is reliable:

   - *Who authored this information?* Is the author's name and affiliation disclosed? Is there an e-mail address so that you can inquire further? Is the author the creator or the compiler of the information?
   - *Who is publishing this information?* Can the producer be identified and contacted? Is it a professional organization? Does the organization have a particular bias? Who is the intended audience?
   - *What can you determine about the content?* How complete is the information? Is it an abstract of the complete text? Are the references documented, current, and relevant?

Warning signs include:

- Numbers or statistics presented without an identified source
- Information you cannot corroborate with other sources
- Extremist language or sweeping generalizations
- Conflict of interest between the source and the material presented
- Undated information or old dates on information known to change rapidly

INFORMATION SOURCES: BUSINESS FINANCIAL DATABASES

ValTip

The major information services provide one-stop sources for business and financial data. These services, which include Dialog, Lexis-Nexis, Factiva, OneSource, Proquest, and Bloomberg, offer the most extensive collections of periodicals, legal information, and financial data available.

Local or university libraries subscribe to one or more of these services. Also, most of them can be accessed via the Internet. Many now offer special pricing packages for smaller firms.

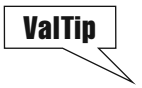
- *Bloomberg*. Bloomberg is the premier financial data provider catering primarily to professional brokers and institutional investors. Bloomberg offers a continuous data feed delivering real-time, historical, and descriptive data. Users can import financial data into spreadsheets. Information includes quotes, company information, information on warrants, options, and convertibles, historical prices/yields, fundamentals, and earnings analysis. The Bloomberg site provides far more information than is necessary for most valuations; however, certain practitioners swear by the extensive database of downloadable financial information, news stories, and industry information.
- *Dialog*. The Dialog Corporation, plc, a leading provider of information to the corporate market, provides access to information on 14 million U.S. and international companies. Dialog's market research information covers market share and sales figures, competitive intelligence, corporate finance, business directories, and financials. Dialog has contracts with content providers such as Dun & Bradstreet, Information Access Corporation, and Standard & Poor's. Access to Dialog's collection of more than 600 databases is available on the Internet at *www.dialog.com*.
- *Factiva*. Factiva.com (formerly Dow Jones Interactive) gives subscribers direct access to a collection of 8,000 publications including local and global newspapers, newswires, trade journals, newsletters, magazines, and transcripts. Financial data is available on more than 24,000 global companies.
- *Lexis-Nexis*. Lexis-Nexis is the world's largest provider of information products. The Lexis service is a full-text legal information service. Nexis is a news and business online information service offering comprehensive company, country, financial, demographic, market research, and industry reports. Nexis provides access to thousands of worldwide newspapers, magazines, trade journals, and industry newsletters. It also provides tax and accounting information, financial data, public records, legislative records, and data on companies and their executives. The IRS uses the Lexis-Nexis information service extensively. In 1999 the IRS Compliance Group awarded Lexis-Nexis an exclusive, nationwide $21.5 million contract to provide information to a minimum of 60,000 IRS employees. If you are opposing the IRS on a valuation matter, consider searching Lexis-Nexis (*www.lexisnexis.com*) so you have access to exactly the same information.

- *OneSource Information Services.* OneSource provides access to corporate, industry, and market intelligence information at *www.onesource.com*. The Business Browser product line includes business and financial information on over 1 million public and private companies from more than 25 information providers. These sources include both textual information, such as news, trade press, executive biographies, and analyst reports, and numeric information, such as company financial results, stock quotes, and industry statistics.
- *Proquest.* Proquest is the new name of respected information provider Bell & Howell. Proquest (*www.proquest.com*) users have access to a variety of databases containing content from thousands of journals including 300 accounting and tax publications with official releases from the AICPA and FASB.

In addition to these information services, there are a number of individual Web site sources for business valuation information. Selected sites along with information on certain printed resources are profiled below.

ECONOMIC RESEARCH

The purpose of economic research is to understand the effects of economic conditions on the subject company both at the national level and at the company's market level. These macroeconomic forces are factors over which the company has no control.



Analysts must consider the key external factors that affect value, such as interest rates, inflation, technological changes, dependence on natural resources, and legislation.

It is important to identify trends that may be particularly favorable or unfavorable to the subject company. For example, low home mortgage rates are favorable if the subject company is a residential contractor. Low unemployment may be a negative factor if the subject company is heavily dependent on labor resources.

Additional issues to consider when analyzing a local economy include:

- Whether the local economy is dependent on a single employer or industry
- The extent and condition of the area's infrastructure
- Announcements of major plant openings or closings
- Income levels and poverty rates
- Attitudes of local officials toward attracting new employers
- Population growth

SELECTED SOURCES OF ECONOMIC INFORMATION

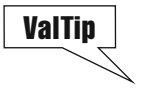
The specific sources detailed below will provide basic information on economic conditions. Supplement the information obtained from these sites with information

from the services listed previously, your local or university library, and discussions with experts knowledgeable about the market area.

- *Conference Board.* The Conference Board collects and publishes a variety of information on the U.S. economy, including the monthly Consumer Confidence Survey and other research publications based principally on original survey research and extensive executive interviews. Conference Board publications cover such issues as workforce diversity, the role of the board of directors in strategic assessment, the measurement of companies' community involvement, performance enhancement, organizational structure and strategy, and leadership. The Conference Board also publishes ongoing series on top executives' and directors' compensation, institutional investment, and the contributions budgets of U.S. corporations. Information is available at *www.conference-board.org*.
- *Dismal Scientist.* The Dismal Scientist (*www.dismal.com*) offers comprehensive and timely economic data and analysis at the metro, state, and national level written by recognized economists. This site pulls together statistics from a number of sites in one location. The Economic Profile generator allows the user to enter a ZIP code and get a detailed economic profile for that local area. The Dismal Scientist Forecast section provides historical and forecasted information on major national indicators both quarterly and annually. The Dismal Scientist is one of a collection of excellent sites owned by Economy.com, Inc. Other sites in the family include Economy.com, FreeLunch.com, and DataBuffet.com.
- *Federal Reserve System.* The Federal Reserve publishes data on the economies of the 12 Federal Reserve Districts. *The Summary of Commentary on Current Economic Conditions by Federal Reserve District,* commonly known as the Beige Book, is published eight times each year (*www.federalreserve.gov/FOMC/BeigeBook/2002/*).
- *National Economic Reviews.* Several firms, including Mercer Capital Management (*www.bizval.com*) and JT Research (*www.jtresearch.com*), produce quarterly economic overviews. These typically include an economic narrative covering major economic variables, stock market trends, interest rates, and economic indicators.
- *STAT USA.* The U.S. Department of Commerce developed STAT-USA as a clearinghouse to disseminate economic, business, and international trade information produced by the U.S. government. The information collected by STAT-USA is produced by hundreds of separate offices and divisions of the government. STAT-USA (*www.stat-usa.gov*) has an extensive collection of domestic and international economic statistics available to users on a subscription or as-needed basis.
- *The U. S. Census Bureau.* American FactFinder, the interactive database engine developed by the Census Bureau, allows users to browse the bureau's data warehouse and then to search, view, print, and download static reports and summary tables. Users may even cross-tabulate data to come up with their own customized statistics. The American FactFinder (*http://factfinder.census.gov*) is the Census Bureau's primary vehicle for distributing the 2000 Census data.

Other information collected by the Census Bureau is available at *www.census.gov*. For current economic indicators including retail sales, housing starts, durable goods orders, factory orders, trade balances, and inventories, see the Bureau's Census Economic Briefing Room (*www.census.gov/cgi-bin/briefroom/ BriefRm*). Numerous

print publications are available from the bureau, including *Census of Retail Trade, Census of Manufactures,* and the annual volume of the *Statistical Abstract of the United States*.



The Beige Book contains information on current economic conditions in each district gathered through reports from interviews with key business professionals, economists, and market experts.

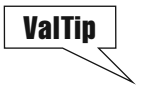
INDUSTRY RESEARCH

The industry analysis should provide a picture of where the industry is going and how the subject company fits in. Look at historical and projected growth in the industry, the number and respective market shares of competitors, and prospects for consolidation. These questions should help in the preparation of an industry analysis:

- What are the prospects for growth?
- What are the industry's dominant economic traits?
- What competitive forces are at work in the industry and how strong are they?
- What are the drivers of change in the industry and what effect will they have?
- Which companies are in the strongest/weakest competitive positions?
- What key factors will determine competitive success or failure?
- How attractive is the industry in terms of its prospects for above-average profitability?
- How large is the industry?
- Is the industry dominated by a few large companies?
- Are there many public companies in this industry?
- How much merger and acquisition activity is occurring?
- What are the barriers to entry?
- Is it a regulated industry?
- Who are the customers? Is that base growing?

SELECTED SOURCES OF INDUSTRY INFORMATION

- *American Society of Association Executives.* The Web site of the American Society of Association Executives (ASAE) is an excellent starting place for locating other trade associations. The ASAE has compiled on its site a "gateway" to a searchable index of thousands of trade associations. From this gateway (*www.asaenet.org/gateway/onlineassocslist.html*), you can type in a keyword describing your industry, and the ASAE search engine will return a list of associations whose names contain that keyword.
- *First Research Industry Profiles.* First Research (*www.1stresearch.com*) publishes summary industry analyses on a wide variety of industries. The reports focus on understanding industry dynamics relative to suppliers, customers, and competi-



Investext Industry Insider is currently the only online collection of trade association research. It includes industry-specific information such as statistics, economic indicators, analysis, trends, forecasts, and surveys.

tors. The reports are, on average, about eight pages long and cover industry trends, challenges, and opportunities, and provide links to industry related sites.

- *Integra Information Business Profiler.* The Business Profiler industry reports describe the normative financial performance of privately held businesses in more than 900 industry sectors and 13 sales ranges. The Business Profiler (*www.integrainfo.com*) is a benchmarking tool with comparative statistical information similar to the Annual Statement Studies published by the Risk Management Association (formerly Robert Morris Associates), but more extensive. The Business Profiler also allows users to upload summary financial statements for a subject company, and then, using SIC codes, select an industry to produce a report showing side-by-side comparisons between the company and its industry.
- *INVESTEXT Industry Insider.* Investext (*www.investext.com*), a division of Thomson Financial Services, developed Industry Insider to bring together information developed by more than 200 trade associations.

  Investext Industry Insider has agreements with many trade associations for hard-to-get information; as a result, much of the information in the Industry Insider database is not available elsewhere on the Web.
- *MarketResearch.com.* MarketResearch.com provides access to more than 50,000 research publications from more than 350 consulting and advisory firms. If you need in-depth data on a particular product or market segment, these market research reports at (*www.marketresearch.com*) may be the answer.
- *Standard & Poor's Industry Surveys.* Industry Surveys profiles 52 industries in detail. Coverage is extensive with a focus on the current situation and outlook for each industry. Summary data on major companies and a section on how to analyze a company is included for each industry. Printed volumes are published quarterly with each industry being updated twice a year. Industry Surveys are available online as part of the Standard & Poor's Advisor Insight service (*www.advisorinsight.com*) and also as part of the OneSource service.

GUIDELINE COMPANY AND TRANSACTION RESEARCH

A search for guideline public companies begins with a thorough understanding of the operations and markets of the subject company. Choosing the right guideline companies and transactions is an involved process that is discussed at length in Chapter 6. The sources below, along with the information services discussed earlier, will provide the information necessary for analysts to choose guideline public companies and transactions for valuation analysis.

- *Alacra.* Alacra, Inc. (formerly Data Downlink Corporation) renamed its popular online service XLS.com in 2001. Both the company and the online service are known as Alacra. Alacra (*www.alacra.com*) offers business information, such as financial, economic, demographic, industry, country and market-specific data. Alacra distinguishes itself from similar services by allowing users to automatically download information from its more than 60 databases directly into a Microsoft Excel or Lotus 1-2-3 spreadsheet.
- *Bizcomps.* Bizcomps is compiled by Jack R. Sanders of Asset Business Appraisal and is available on the Bizcomp site at *www.bizcomps.com*, from John Wiley & Sons' ValuSource unit, and at *www.bvmarketdata.com*. It contains information on hundreds of small business sales. The database is updated and expanded every year. Deals are sorted by industry, and each record reflects revenue and cash flow multiples.
- *Disclosure/Compact D/SEC.* The Disclosure SEC Database consists of business and financial information on more than 12,000 U.S. public companies. The database contains up to 200 data elements per company record and up to 15 years of annual and quarterly financial statement data. It provides company profile information, such as corporate addresses, officers and directors, financial statement data, full-text management's discussions and president's letters, and current pricing, earnings, and dividends data. Information is available at *www.primark.com/pfid/content/disclosure.shtml*. Other data sources for publicly traded company information include Standard & Poor's CompuStat, and the OneSource Business browser.
- *Done Deals Database.* The Done Deals Database contains information on transactions of private and public midmarket companies sold for purchase prices between $1 million and $250 million. Reported transactions cover approximately 30 industries. The data include sale prices, terms, and ratios. Access to Done Deals database is available on the web through NVEST, a network for the private equity, merger, acquisition, and venture capital industry on the Internet at *http://donedeals.nvst.com*.
- *EDGAR (Electronic Data Gathering, Analysis, and Retrieval).* The EDGAR system was established by the Securities and Exchange Commission to allow public access to the filings of public companies.

The EDGAR database contains information on thousands of public companies.

Since May 6, 1996, all public domestic companies are required to file electronically on EDGAR, unless they are granted a hardship exemption. Edgar data is accessible at *www.sec.gov*. Private vendors have found a niche offering enhancements to the basic Edgar information offered by the SEC. The web site 10-K Wizard (*www.10kwizard.com*) allows users a variety of search options including full-text and SIC code searching. Similar services are available from other vendors including Edgar Online and LiveEdgar.

- *FIS Online (Formerly Moody's Company Data Direct)*. This product evolved from a CD with U.S. public company data into a suite of global business and financial information products. Now called FISonline, the service is available online at *www.fisonline.com*. In addition to the Moody's database of business and financial information on over 10,000 public companies, the service includes information on international companies and brokerage reports.
- *IBA Database*. The Institute of Business Appraisers (*www.instbusapp.org*) database contains information on over 15,000 small business transactions, the majority of which are priced below $1 million.
- *Media General MegaInsight*. The Media General common stock database is composed of annual and quarterly financial statements for more than 9,000 publicly traded companies. The database has daily price and volume information on over 10,000 issues going back to 1980. The database is accessible through information services such as Dialog and Factiva. Media General also offers free company profiles created from the common stock database on its web site at (*www.mgfs.com/search/profile/find.htm*).
- *Mergerstat*. Mergerstat is another major publisher of merger and acquisition data, primarily in the form of printed publications, including *Mergerstat Review*, *Mergerstat Transaction Roster*, and the *Mergerstat Control Premium Study*. The publications track mergers and acquisitions, unit divestitures, management buyouts, and certain asset sales, and include industry information by size, premium, and transaction multiples. Mergerstat offers the Transaction Roster online at *http://roster.mergerstat.com*. Other Mergerstat products are available online from information services such as Alacra, Bloomberg, and Lexis-Nexis. Information is available at *www.mergerstat.com*.
- *Securities Data Corporation*. Purchased by Thomson Financial in 1999 and renamed Thomson Financial Securities Data, this service offers a number of financial transaction databases at *www.tfsd.com*. Completed-transaction data are available on the SDC Worldwide Mergers & Acquisitions database, which is searchable on a wide range of parameters, including SIC code, time frame, and transaction size. This database covers more transactions than any other source. Updated daily, the data go back to 1979 (U.S.) or 1985 (non-U.S.), covering more than 273,000 transactions and offering more than 1,400 detailed information elements, including target and acquirer profiles, deal terms, deal value, and stock premiums.
- *Pratt's Stats*. Pratt's Stats is a database of private company transactions compiled by Dr. Shannon Pratt of Business Valuation Resources. This database provides a large number of data items for each transaction, including financials, ratios, and some company background information. Transaction data are obtained from the International Association of Business Brokers and some public filings. Pratt's Stats is now accessible online at *www.prattsstats.com*.

The small business transaction databases listed above are covered in more detail in Chapter 6.

PRESENTING RESEARCH IN A REPORT

Once you have used the sources presented here to gather information, that information must be analyzed and prepared for inclusion in the valuation report. The

economic and industry information presented in the report must relate to the valuation conclusion.

This failure to reflect the effect of industry and economic data on the value can result in a situation where the economic outlook may be for recession and the industry shrinking but the valuation conclusion implies a brisk rate of growth and low level of risk.

ValTip

A common mistake by inexperienced valuation analysts is to wait until the last minute to do the industry and economic analysis and then to drop it into the text without any discussion of how it relates to the valuation conclusion.

OTHER SOURCES OF INFORMATION

Mergerstat/Shannon Pratt's Control Premium Study™

This study is a web-based tool used to quantify minority discounts and control premiums used in the business valuation, business appraisal, venture capital, and merger and acquisition (M&A) professions. The Study currently contains approximately 2,850 total transactions with over 410 deals in business services, over 370 deals on depository institutions, and 130 deals in the communications industry. Over 50 percent of the deals in the database have net sales less than $100 million. Subscribers are granted access to all of the details in the database, including the control premium, five valuation multiples, and the available information to calculate the ROE (net income/BV per share × number of shares outstanding).

BVLibrary.com℠

This online database of information is a good research tool for the valuation professional. It contains the full text and abstracts of all important federal and state court cases involving business valuation; IRS materials including Revenue Rulings, PLRs TAMs, and Internal Revenue Code sections relevant to business valuation; conference papers and other articles not published elsewhere; all articles featured in *Shannon Pratt's Business Valuation Update*®, a monthly newsletter since its inception in 1995; and restricted stock study papers. All documents are key word searchable.

SUMMARY

While every attempt has been made to provide up-to-date information in this chapter, the nature of this rapidly changing information industry makes that virtually impossible. Some of the specific sources mentioned in this chapter may be no longer available or may have changed content. Before attempting to access any of the information sources discussed, check with the vendor for the most current pricing and access information.

A properly conducted search for information will yield very reliable information that will support valuation analyses and enhance the presentation of a valuation in a report. For further information on information gathering, refer to *The Best Websites for Financial Professionals, Business Appraisers, and Accountants* by Eva M. Lang and Jan Davis Tudor (New York: John Wiley & Sons, 2001).

ADDENDUM 1—VALUATION INFORMATION REQUEST LIST

COMPANY: _____

VALUATION DATE: _____

If you have any questions, please call NAME at PHONE.

NOTE: This is a generalized information request. Some items may not pertain to your company, and some items may not be readily available to you. In such cases, please indicate N/A or notify us if other arrangements can be made to obtain the data. Items already provided have been marked with an "X."

A. **Financial Information**

_____ 1. Financial statements for fiscal years ending FIVE YEARS.

_____ 2. Interim financial statements for the year-to-date DATE OF VALUATION AND ONE YEAR PRIOR.

_____ 3. Financial projections, if any, for the current year and the next three years. Include any prepared budgets and/or business plans.

_____ 4. Federal and State Corporate Income Tax Returns and supporting schedules for fiscal years ending FIVE YEARS.

_____ 5. Explanation of significant nonrecurring and/or nonoperating items appearing on the financial statements in any fiscal year if not detailed in footnotes.

_____ 6. Accounts payable aging schedule or summary as of DATE OF VALUATION.

_____ 7. Accounts receivable aging schedule or summary and management's general evaluation of quality and credit risk as of DATE OF VALUATION.

_____ 8. Is LIFO accounting used for inventory reporting purposes? If yes, can inventories and cost of goods sold be restated on a FIFO basis for each of the past five fiscal years?

_____ 9. Fixed asset and depreciation schedule as of DATE OF VALUATION.

_____ 10. Amortization schedules of mortgages and notes payable; and terms of bank notes, credit lines, and/or debt agreement(s) as of DATE OF VALUATION.

_____ 11. Current financial statements for any ESOP, profit sharing, pension, or other employee benefit trust at DATE OF VALUATION.

_____ 12. Current level of over (under) funding for any defined benefit plan at DATE OF VALUATION.

_____ 13. Expense classification: fixed/semivariable/variable.

B. **Products and Markets**

_____ 1. List the major products, services, or product lines of the Company and provide copies of marketing materials including sales brochures, catalogs, or other descriptive sales materials.

_____ 2. Please provide the sales and profit contributions analysis by product, product line, service category, customer, subsidiary, and/or location (whichever is applicable).

_____ 3. Unit volume analyses for existing product lines for the past five years.

_____ 4. Please provide the major products or services added in the last two years (or anticipated) and current expectations as to sales potential.

_____ 5. Please provide the new products under development with expectations as to potential.

_____ 6. If customers are consolidated, please provide the top 10 customers of the Company, indicating sales (or sales upon which commissions were earned) and unit volumes for each of the past three fiscal years.

_____ 7. Please provide the major accounts gained (lost) in the last year indicating actual sales in the current year and beyond.

_____ 8. Please provide the major competitors (full name, location, size, and estimated market share of each).

_____ 9. Please provide the trade associations memberships.

_____ 10. Please provide the majority industry publications of interest to management.

C. **Operations**

_____ 1. In a paragraph or so, please complete this statement: "Our company is in the business of."

_____ 2. Briefly name and describe the operations of all major operating entities, whether divisions, subsidiaries, or departments.

_____ 3. List the top 10 suppliers (or all accounting for 5 percent or more of total purchases) and the level of purchases in each of the past two years (include total purchases by the Company in each year).

_____ 4. Identify product(s) on which the Company is single-sourced, or suppliers on which the Company is otherwise dependent.

_____ 5. Please provide the dividend policy, dividend history, and prospect for future dividends.

_____ 6. Please provide a copy of any existing Employee Stock Ownership Plan.

_____ 7. Please provide copies of all other stock option plans or option agreements, or any other plan providing vested benefits in Company stock. Also list number of options granted and to whom, and the stated exercise price(s) and expiration date(s).

_____ 8. For the ESOP, pension plan, and/or profit sharing plan, please provide the basis for Company contributions (contribution policy), contributions in each of the past five years, and projection for future contributions.

_____ 9. The most recent projection of emerging ESOP repurchase liability. If no study has been done, list known ESOP liquidity requirements during the next three years (e.g., known retirements during periods).

_____ 10. Please provide copies of any appraisals of the stock of the Company made during the last three years.

D. **Facilities**

_____ 1. Please provide the location, age, and approximate size of each facility. Please provide or estimate business volume by major facility.

_____ 2. Please provide the ownership of each facility and other major fixed assets. If leased, include name of lessor and lease terms or agreements. If owned by the Company, include:

- Date purchased
- Purchase price
- Recent appraisals
- Insurance coverage
- Book values

_____ 3. If accelerated depreciation is used for financial statement purposes, please provide estimated depreciation as if all assets were on a straight-line depreciation basis.

E. **Personnel**

_____ 1. Please provide a current organization chart.

_____ 2. Please provide the number of employees (distinguish fulltime and parttime) at year-end for the last six years including current employee classifications, general wage scales, and approximate rate.

_____ 3. List all union relationships including name of union, date of current agreement, workers and facilities covered.

_____ 4. Please provide the number of parttime and fulltime Company-employed salespersons including compensation arrangements or schedules. If there are none, describe how sales are obtained and by whom.

_____ 5. Please provide a description of the management team including current title, age, length of Company service, and background. Also list the annual salary and bonus of each person for the current year and each of the last two years.

_____ 6. Please provide the full names of the Board of Directors. For outside members, please provide occupation.

F. **Corporate Documents and Records**

_____ 1. Please provide the Corporate Charter, Articles of Incorporation, and/or Bylaws.

_____ 2. Please provide the minutes of Board of Directors and shareholders meetings for the most recent three years (may be reviewed by us on-site.)

_____ 3. Please provide a summary of major covenants or agreements binding on the Company, e.g., union contracts, capital leases, employment contracts, service contracts, product warranties, etc.

_____ 4. Please provide a description of any pending litigation including parties involved, date of filing, description and nature of the lawsuit or claim, current status, and expected outcome and financial impact.

_____ 5. Please list all subsidiary companies and the percentage ownership in each.

_____ 6. Please name any "related" companies (common ownership, common shareholders, etc.) and briefly describe the relationship(s).

_____ 7. Please provide the stock ledger.

_____ 8. Please provide all closing statements and purchase agreements related to all purchases of the Company's stock over the history of the Company.

_____ 9. Please provide all closing statements and purchase agreements related to all mergers or acquisitions by the Company up to the valuation date.

ADDENDUM 2—MANAGEMENT QUESTIONNAIRE

EXACT COMPANY NAME: _____ DATE _____

ADDRESS: _____

PHONE: _____ INTERVIEWER: _____

Please provide the following information to the best of your ability. If some items are not applicable, please indicate n/a. The objective of this information request is to provide us with operational information that will aid us in developing the fair market value of _____'s interest in _____.

We will keep the information confidential.

INTERVIEWEE(S):

	Name	Title
1.		
2.		
3.		
4.		

PURPOSE OF THE APPRAISAL AND DESCRIPTION OF THE TRANSACTION

Describe the activity or transaction giving rise to the transaction:

OTHER INFORMATION REGARDING THE TRANSACTION

- Number of shares being valued (each class) _____
- Total number of shares issued (each class) _____
- Total number of shares outstanding (each class) _____
- Date of the valuation _____
- State of incorporation _____
- Standard of value _____

PLEASE PROVIDE THE NAME, ADDRESS, AND TELEPHONE NUMBER OF THE BUSINESS ATTORNEY.

PLEASE PROVIDE THE NAME, ADDRESS, AND TELEPHONE NUMBER OF THE BUSINESS ACCOUNTANT OR BOOKKEEPER.

DESCRIPTION OF THE BUSINESS

What business are you in?
What products and services are sold?
To whom?
Where?

What is your business code? (See tax return)

What is the SIC Code? (See O.M.B. Publication)

What industry(s) are you in?

What industry trends do you consider to be important?

What is the date the business started?

When does the fiscal year end?

Which factors do you consider most important to your company's success?

HISTORY OF THE BUSINESS

Discuss from founding to the present including people, date, places, new products, markets, and physical facilities.

OWNERSHIP

Please attach shareholder list as of the date of the valuation.

Transactions in the common stock and basis for price:

(Parties, dates, shares, and prices)

Have there been any offers to purchase the company? If so, discuss price, dates, terms and current status of negotiations.

Prior appraisals:

MANAGEMENT

Obtain a current organizational chart.

List key management personnel with title, length of service, age, and annual compensation.

	Name	Title	LOS	Age	Compensation
1.					
2.					
3.					
4.					
5.					

Are any key management positions open at this time?

Does a key-person dependency exist? If so, what are the plans for succession?

Would the sudden loss or withdrawal of any key employee have an adverse impact on the business?

Is there a key-person life insurance policy on that person? If so, how much?

PRODUCTS/SERVICES

What is the business mix?

How is it changing?

Any new products?

How are they developed?

Expected performance.

What percent of your output is manufactured by you, and what percent is for resale?

What proportion of sales are replacement parts?

Note any important differences in profit margins by product-line.

MARKETS AND THE ECONOMY

What is your market area?
Is it determined by market segment, geography, or customer type?

Discuss any important characteristics of the relevant economic base.
Obtain information of local chambers of commerce if needed.

Is the business sensitive to economic cycles or seasonal influences?
Is it concentrated in any one industry?

What is the approximate percentage of foreign sales, and, if any, total sales?

Do profit margins on foreign sales, if any, differ slightly from profit margins on domestic sales?

Are any new product lines or services being considered?

CUSTOMERS

List major customers and the annual sales to each.

Discuss length of relationships and customer turnover.
Is the company dependent on a small group of large customers?
A large group of small customers? Describe.

MARKETING STRATEGY

What is your sales and marketing strategy?

How are sales made and by whom?
On what is their compensation based?

What are the risks of obsolescence or replacement by new or similar products?

OPERATIONS

Outline the corporate organization structure (Divisions, Departments, etc.):
Discuss briefly the flow of operations that produce the product or service.

PRODUCTION

Does this business have a high or low level of operating leverage?
What is the relationship of variable costs and fixed costs to total revenue?

Has the Company had any difficulties in obtaining liability insurance?
What is happening to insurance rates?

Does the work environment give rise to any OSHA or EPS concerns?
If so, discuss in detail including the prospective cost of compliance.

Does location or previous uses of land or facility raise concern over environmental hazards?

Is the production process dependent upon any patents, licenses, or other contracts which are not controlled by the Company?

Do you purchase your raw materials directly from the manufacturer or from wholesalers?

Who are major suppliers and for what production inputs?
Is the company dependent upon any one supplier for critical components of the product or service?

Is the Company unionized?
What unions?
What is the status of the contract or future organizing activities?
Have any strikes occurred?

How many full and part-time employees does the Company have?
Determine the number by division or department.
What are their general experience, skill, and compensation levels?

REAL PROPERTY

Describe the real estate and equipment used by the company in the production process.
Is owned or leased?
If leased, are affiliated parties involved?
Are the leases at market terms (or were they at inception)?
What is the size, age, condition, and capacity of the facilities?
Are they adequate?

Please describe your plant/office facilities, including:

- Owners
- Real estate taxes
- Land
  - Acreage
  - Cost
  - Assessed value
  - Fair market value, if known
- Buildings
  - Type of construction
  - Age condition
  - Location on the property
  - Assessed value
  - Fair market value, if known
  - Fire insurance amount
  - Square feet

Machinery and equipment
- Description
- Age and condition
- Efficiency utilization (older equipment or state of the art?)
- Future plant, machinery, and equipment requirements, including estimated repairs

What is the current value of the real estate and equipment?
Is this based on appraisal or estimates?

DESCRIPTION OF THE CAPITAL STRUCTURE

What classes of securities does the Company have?

Common stock—any restrictions on the stock such as a buy-sell agreement or charter restrictions?

Preferred stock—what are the terms of the issue and the protective covenants?

Subordinated debt—terms of the issue and protective covenants.

Are any stock options or warrants outstanding?
If so, describe the terms in detail.
Obtain copies of the option agreement.

OTHER

Discuss dividend policy and dividend history.
What are the future dividend payments expected to be?

Discuss pending litigation and potential impact on the Company.

Any existing buy-sell or other restrictive agreements?

Any pre-nuptial agreement? (if applicable)

Discuss profit sharing, ESOP, or other retirement plans.
Obtain a copy of the ESOP plan if not already sent to us.
At a minimum, obtain copies of the provisions related to shareholder liquidity in the plan.

Who are the Company's regulators (for example, public service commissions, bank regulators)?
Is the Company operating under any regulatory orders?
If so, obtain copies.

FINANCIAL STATEMENT REVIEW

Quality of the financial statements.

If the statements are audited and qualified, discuss the reason(s) for the qualifications.
If company prepared interim statements are being used, determine whether the accounting principles are consistent with the accountant prepared statements.

Discussion notes can be made on the spread sheets or this questionnaire. Remember that the objective of the interview is not only to identify changes in numbers, but also to *ascertain the reasons* for the change. Among the issues considered are:

BALANCE SHEET REVIEW

Approximate total asset book value:

Approximate net book value:

Cash:

- What is the minimum level of cash required to operate the Company?

Accounts receivable:

- What are the normal terms of sale?
- How does the collection period compare to industry norms and history?
- What is the history of bad debts?
- Are receivables concentrated with any one customer?

Inventory:

What accounting method is used to calculate inventories?

What is the trend in the level of inventories and the turnover rate?

Please describe any obsolete inventory and the amount you paid for it.

Other current assets:

Describe other current assets.

Are any not related to the business?

Fixed assets:

Describe the major fixed assets.

How is depreciation calculated for book and tax purposes?

What is the capital budget for the coming years?

What types of fixed assets will be needed?

Are any excess assets present?

Are properties/equipment owned or leased?

Notes receivable:

What are the terms?

If due from officers or affiliates, are terms at market rates?

Other assets—Long-term:

Describe in detail.

Notes payable:

To whom do you owe money and on what terms?

Accounts payable:

What are the general terms of purchase of goods and services?

What is happening to the trend in payables and turnover ratios?

Taxes payable and deferred taxes:
Other accrued expenses:

Long-term debt:
- Who is owed money and on what terms?
- Is it secured? If so, by which assets?

Mortgage notes payable:
- Describe terms and collateral.

Any contingent liabilities?

INCOME STATEMENT

Approximate annual sales volume:

Sales:
- What has caused changes in sales over the past five years?
- To what extent can growth in sales be attributed to 1) unit volume and 2) inflation?
- How does the growth rate in sales compare to other items on the income statement?
- What are the projections for the current year and beyond?
- Basis for projections?

Costs of goods sold:
- What are the key factors which affect cost of goods sold?
- Have there been any changes in accounting procedures?

Gross profit margin:
- Explain changes in GPM for the last five years.
- (price increases, cost increases, inventory write downs, etc.)

General and administrative expenses:

What are the major expense items of the Company?
How and why have the items fluctuated over the last five years?
Are any non-recurring expenses included in the totals?

Other income/expense:

What are the sources?

Taxes:

What is the Company's statutory tax rate?
Are state taxes included?

Please describe any hidden or intangible assets, such as:

Patents
Favorable leases
Any favorable financing arrangements
Number of recurring, stable customers
Employment contracts
Copyrights
Long-term customers' contracts
Trademark
Unique research and development
Highly trained staff in place
Undervalued securities or other investments

Please describe any key liabilities:

Commitments for new buildings or machinery
Long-term loans outstanding and terms

GENERAL OUTLOOK (if not covered elsewhere)

IS THERE ANYTHING ELSE WE SHOULD KNOW ABOUT THE BUSINESS THAT WE HAVE NOT ALREADY DISCUSSED?

ADDENDUM 3—INDUSTRY RESEARCH FORM

Industry Name: _____

_____

Industry SIC CODE: _____ NAICS CODE: _____

Trade Associations in this Industry: _____

_____

Keywords, Industry Terms, Jargon:

_____

_____

Leading Public Companies in this Industry:

_____

_____

____ Checked 10-K for industry discussion ____ Checked for Analysts Reports

Trade publications in this industry _____

_____

____ Checked periodical databases for relevant articles

____ Checked publications by industry analysts (First Research, Standard & Poor's, etc.)

CHAPTER 3

Financial Statement and Company Risk Analysis

During the 1990s, the Internet enhanced our ability to obtain and disseminate information dramatically. Information that was once privately owned or perhaps available only to experts is now widely accessible, almost instantaneously. The availability and accessibility of all this data provides the analyst with an expanded tool set by which to gain a deeper insight into the strengths, weaknesses, opportunities, and threats of a given company or industry.

Due to the enormously expanded amount of data available, analysts must go beyond simply measuring the economic income of a given enterprise. They also must attempt to determine what factors give rise to the ability (or inability) of the enterprise to generate required returns for the foreseeable future; that is, they must make in-depth enterprise risk assessments. Consequently, a well-reasoned valuation analysis includes certain critical elements:

- An estimation of the amount of future economic benefits (normalization and projection of future cash flows)
- An assessment of the probability that the projected future economic benefits will be realized

This chapter (also see Chapter 4) discusses the methods generally used to evaluate a business in this way. It also focuses on the mechanics of the process of financial statement analysis, generally considered to be five steps:

1. *Spreading* historical financial statements in columnar format
2. *Normalizing* historical financial statements
3. *Common-sizing* normalized historical financial statements
4. *Performing* ratio analysis on the normalized historical financial statements
5. Subjecting normalized historical financial statements to *industry comparison*

HISTORICAL FINANCIAL STATEMENT ANALYSIS

A company's historical financial statements generally provide the most reliable information for estimating future performance and risk assessment. Audited financial statements are preferred. Reviewed statements, while not providing the level of assurance of an audit, nonetheless are generally reliable since they are prepared in accordance with Generally Accepted Accounting Principles (GAAP) and contain footnote disclosure and supplemental schedules. However, since the financial statements of many closely held businesses are neither audited nor reviewed,

the analyst may have to rely on compiled financial statements, which provide no level of assurance and may not contain footnote disclosure. In other cases, the analyst may have to rely on corporate income tax returns or internally generated financial statements, the quality of which may be suspect for purposes of proper financial statement analysis. If the historical information is unreliable, the analyst may wish to supplement it with a review of the paper or electronic "books" of original entry.

ValTip

The CPA-analyst must take special care to set expectations in both the engagement letter and the valuation report regarding the degree of responsibility assumed regarding financial statements presented within the report because of accounting standards for attestations, reviews and compilations.

LENGTH OF FINANCIAL HISTORY TO BE USED

An analysis of five years of historical financial statements is generally considered sufficient to identify trends occurring in the business. This five-year period is suggested in Revenue Ruling 59-60 for income statements (two years for balance sheets) and is commonly thought to be a standard. However, financial statements may be necessary for more or fewer than five years if the subject company's business cycle does not coincide with a five-year time frame.

SPREADING FINANCIAL STATEMENTS IN COLUMNAR FORMAT

Generally, the balance sheets and the income statements for the period selected are laid side by side in columnar fashion. This format allows the analyst to compare the business to itself over the period and to spot trends or to identify unusual items requiring further investigation and analysis. This format also allows the analyst to compare the subject company data to comparative data.

Exhibits 3.1 and 3.2 demonstrate the results of spreading the historical balance sheets and income statements of a fictitious company, Ale's Distributing Company, Inc., for the five-year period ended December 31, 2001. These exhibits represent one of many possible presentations.

ADJUSTMENTS TO FINANCIAL STATEMENTS

One of the objectives of financial statement analysis is to ensure that the historical financial statements, which can provide the basis for any forward-looking estimates, reliably reflect the true operating performance of the enterprise. Therefore, the historical financial statements may need to be adjusted (modified) for certain items that, in the analyst's judgment, distort the true operating performance of the business.

Exhibit 3.1 Ale's Distributing Company, Inc.—Historical Balance Sheets

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Assets					
Current Assets					
Cash	$ 1,391,500	$1,314,600	$1,278,300	$ 920,800	$1,031,300
Accounts Receivable	2,027,100	1,599,500	1,194,900	1,000,700	762,600
Inventory	2,317,200	1,958,300	1,735,600	1,643,400	1,137,000
Other Current Assets					
Prepaid Expenses	56,600	90,100	145,600	117,200	177,900
Total Other Current Assets	56,600	90,100	145,600	117,200	177,900
Total Current Assets	5,792,400	4,962,500	4,354,400	3,682,100	3,108,800
Fixed Assets - Net					
Fixed Assets - Cost	8,256,500	8,165,800	7,854,200	7,526,400	7,157,000
Accumulated Depreciation	(5,435,100)	(5,236,700)	(5,012,400)	(4,892,300)	(4,526,100)
Total Fixed Assets - Net	2,821,400	2,929,100	2,841,800	2,634,100	2,630,900
Other Assets					
Marketable Securities	1,400,000	1,200,000	1,100,000	1,000,000	900,000
Total Other Assets	1,400,000	1,200,000	1,100,000	1,000,000	900,000
Total Assets	$10,013,800	$ 9,091,600	$8,296,200	$7,316,200	$6,639,700
Liabilities and Equity					
Liabilities					
Current Liabilities					
Accounts Payable	$ 237,400	$ 154,500	$ 228,100	$ 131,100	$ 226,300
Other Current Liabilities					
Customer Deposits	178,100	157,300	150,400	185,800	167,000
Accrued Expenses	465,600	463,200	439,800	395,600	310,600
Total Other Current Liabilities	643,700	620,500	590,200	581,400	477,600
Total Current Liabilities	881,100	775,000	818,300	712,500	703,900
Long-Term Liabilities	3,000,000	2,750,000	2,500,000	2,250,000	2,000,000
Total Liabilities	3,881,100	3,525,000	3,318,300	2,962,500	2,703,900
Equity					
Common Stock	50,000	50,000	50,000	50,000	50,000
Additional Paid-In Capital	150,000	150,000	150,000	150,000	150,000
Retained Earnings	5,932,700	5,366,600	4,777,900	4,153,700	3,735,800
Total Equity	6,132,700	5,566,600	4,977,900	4,353,700	3,935,800
Total Liabilities and Equity	$10,013,800	$9,091,600	$8,296,200	$7,316,200	$6,639,700

Financial statement adjustments are made for a variety of reasons, some of which are:

- To develop historical earnings from which to predict future earnings
- To present historical financial information on a normalized basis, that is, under normal operating conditions
- To adjust for accounting practices that are a departure from industry or GAAP standards

Exhibit 3.2 Ale's Distributing Company, Inc.—Historical Income Statements

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Revenues	$38,054,800	$35,497,100	$35,201,800	$34,627,900	$32,979,800
Cost of Goods Sold	28,323,200	26,389,800	26,246,500	25,779,000	24,355,800
Gross Profit	9,731,600	9,107,300	8,955,300	8,848,900	8,624,000
Operating Expenses					
Advertising	63,700	47,100	58,100	80,800	54,500
Bad Debts	6,400	10,800	7,800	13,900	2,600
Contributions	21,900	25,600	55,700	85,300	33,500
Gas & Oil Expense	96,700	89,700	85,200	86,900	75,900
Employee Benefits	483,900	463,200	451,300	470,200	433,900
Insurance	164,300	124,300	144,500	147,600	134,800
Legal & Accounting	397,500	168,900	173,900	181,300	165,600
Meals & Entertainment	49,300	61,000	59,100	75,700	57,600
Office Expense	120,400	117,900	124,400	129,300	97,600
Other Deductions	28,800	19,900	21,300	24,300	18,700
Pension / Profit-Sharing	160,000	155,000	150,000	145,000	140,000
Promotional Expenses	203,200	191,600	219,600	261,300	202,400
Payroll Taxes	447,700	429,600	486,600	451,900	473,100
Rent	165,000	165,000	13,700	0	0
Repairs and Maintenance	126,300	157,000	158,100	177,400	176,300
Salaries	3,380,400	3,374,400	3,314,200	3,299,000	2,932,700
Taxes & Licenses	124,400	119,700	116,200	140,600	109,800
Utilities & Telephone	156,700	146,800	145,900	167,200	130,100
Total Operating Expenses	6,196,600	5,867,500	5,785,600	5,937,700	5,239,100
Officers' Compensation	2,224,600	1,876,600	1,832,400	1,732,600	2,008,300
Operating EBITDA	1,310,400	1,363,200	1,337,300	1,178,600	1,376,600
Depreciation and Amortization	429,800	474,700	498,700	508,200	507,700
Operating Income/(Loss) - EBIT	880,600	888,500	838,600	670,400	868,900
Miscellaneous Income					
Interest Income	153,200	148,100	128,800	101,700	94,300
Dividend Income	18,600	17,800	16,500	14,200	12,100
Gain/Loss on Sale of Fixed Assets	20,800	22,300	124,700	5,600	11,200
Gain/Loss on Sale of Securities	10,300	20,400	21,500	8,700	25,700
Other Income	5,600	5,100	5,300	3,800	2,500
Total Miscellaneous Income	208,500	213,700	296,800	134,000	145,800
Interest Expense	231,400	210,300	189,600	171,200	151,200
Pre-Tax Income	857,700	891,900	945,800	633,200	863,500
Less: Income Taxes	291,600	303,200	321,600	215,300	293,600
Net Income/(Loss)	$ 566,100	$ 588,700	$ 624,200	$ 417,900	$ 569,900

- To facilitate a comparison of a given company to itself, to other companies within the same industry, or to an accepted industry standard
- To compare the debt and/or capital structure of the company to that of its competition or peers
- To compare compensation with industry norms

An adjustment to historical financial statements should be made if the effect of the adjustment will present more accurately the true operating performance of the enterprise. Therefore, all appropriate adjustments should be made, regardless of whether they reflect positively on the company. Since adjustments that are appropriate for one valuation may be inappropriate for another, it is important to disclose the key assumptions underlying all adjustments.

NORMALIZATION OF HISTORICAL FINANCIAL STATEMENTS

To facilitate proper analysis and interpretation of a company's financial statements, these statements should first be adjusted to reflect the economic realities of "normal" operating conditions. The objective of normalizing historical financial statements is to present the data on a basis comparable to that of other companies in the industry, thereby allowing the analyst to form conclusions as to the strength or weakness of the subject company relative to its peers. It can also reflect what a willing buyer would expect the operating results to be.

Normalization generally involves adjusting for a number of broad categories:

- Unusual items
- Nonrecurring items
- Extraordinary items (both unusual and nonrecurring, per Accounting Principles Board (APB) Opinion #30)
- Nonoperating items
- Changes in accounting principle
- Nonconformance with GAAP
- Degree of ownership interest, including whether the interest has control

UNUSUAL, NONRECURRING, AND EXTRAORDINARY ITEMS

Although APB 30 was not specifically targeted to business valuation, it does provide useful definitions of unusual, nonrecurring, and extraordinary items:

Unusual items. Events or transactions that possess a high degree of abnormality and are of a type clearly unrelated to, or only incidentally related to, the ordinary and typical activities of the entity, taking into account the environment in which the entity operates

Nonrecurring items. Events or transactions that are not reasonably expected to recur in the foreseeable future, taking into account the environment in which the entity operates.

Extraordinary items. Events or transactions that are distinguished by their unusual nature and by the infrequency of their occurrence. Thus, for an item to be classified as an extraordinary item, the item must be *both* an unusual item and a nonrecurring item.

Revenues or expenses that are unusual, nonrecurring, or extraordinary usually are removed from the historical data because they can distort the picture of the ongoing earning power of the business. Caution is advised, however, in that items that might be deemed unusual and infrequent in one industry might not be deemed so in another. Items representative of the type of adjustments made to historical financial statements for unusual, nonrecurring, and extraordinary items include:

- Strikes and other types of work stoppages (unless common for the industry)
- Litigation expenses or recoveries
- Uninsured losses due to unforeseen disasters such as fire or flood
- One-time realization of revenues or expenses due to nonrecurring contracts
- Gain or loss on the sale of a business unit or business assets
- Discontinuation of operations
- Insurance proceeds received on the life of a key person or from a property or casualty claim

NONOPERATING ITEMS

To achieve a clear picture of true operating performance, the analyst may wish to remove nonoperating assets and liabilities and their related earnings and/or expenses from the subject's historical financial statements. Common examples of nonoperating items include:

- Excess cash
- Marketable securities (if in excess of reasonable needs of the business)
- Real estate (if not used in business operations, or, in some situations, if the business could operate in rented facilities)
- Private planes, entertainment or sports facilities (hunting lodge, transferable season ticket contracts, skyboxes, etc.)
- Antiques, private collections, etc.

CHANGES IN ACCOUNTING PRINCIPLE

Analysts often find financial statements with a change in accounting principle. APB 20 states that a change in accounting principle results from the adoption of a generally accepted accounting principle different from the one used previously for financial reporting purposes. The term "principle" includes not only principles and practices but also methods of applying them. Thus, an analyst must understand the effect that a change in accounting principles has on a company's financial statements. Some common examples of changes in accounting principles are:

- A change in the method of pricing inventory, such as LIFO (last in, first out) to FIFO (first in, first out) or FIFO to LIFO
- A change in the method of depreciating previously recorded assets, such as from straight-line method to accelerated method or from accelerated method to straight-line method

- A change in the method of accounting for long-term construction-type contracts
- A change to or from the full-cost method of accounting in the extractive industries

NONCONFORMANCE WITH GAAP

Public companies tend to choose accounting treatments that please shareholders with higher reported earnings. Most closely-held business owners tend to elect an accounting treatment that minimizes earnings and, hence, the corporate tax burden. These choices may mean that, if the financial statements of a private company have not been audited or reviewed, the accounting practices adopted by management may not be in compliance with GAAP. The analyst may choose to make adjustments to bring them into or closer to GAAP compliance so that the subject's financial results can be compared to the financial results of its publicly held industry counterparts, if available and applicable. Adjustments may also be made to calculate cash flow.

Examples of commonly encountered areas of nonconformance with GAAP are:

- Financial statements prepared on a tax or cash accounting basis
- Unrecorded revenue in cash businesses
- Inadequate bad debt reserve (or use of specific write-off method)
- Understated amounts of inventory, failure to write off obsolete or slow-moving inventory, and other inventory accounting issues
- Unrecorded liabilities such as capital lease obligations, workforce-related costs (wages, sick/vacation pay, etc.), deferred income taxes
- Capitalization/expense policies for fixed assets and prepaid expenses
- Fixed asset write-off policies
- Depreciation methods
- Accounting for investments in subsidiaries or affiliated entities
- Timing of revenue/expense recognition for contract accounting, installment sales, warranties, subscriptions, and the like

TAX EFFECTING THE EARNINGS OF SUBCHAPTER S CORPORATIONS

One of the more highly debated issues in business valuation is the treatment of income taxes in valuing S corporations. One school of thought asserts that an S corporation is not subject to corporate-level taxes and, therefore, the earnings stream should not be tax-effected for valuation purposes. The opposing school claims that in order to truly "normalize" the earnings stream of an S corporation for valuation purposes, it must be fully taxed as if it were a C corporation. This debate has been exacerbated by three recent events:

1. The enactment of the Small Business Job Protection Act of 1996 (H.R. 3448) greatly increased the flexibility of S corporation formation and operation.
2. The Small Business Job Protection Act of 1996 revised the S corporation rules by raising the limit on the number of shareholders and allowing greater flexibil-

ity in accounting for distributions, making the S election more viable for larger enterprises that previously could not have considered it. This change opened the door for more and larger companies to elect S corporation status.

3. The decision of the Tax Court in the *Gross*[1] and *Wall*[2] cases, in which the court ruled that, in determining discounted cash flow value, S corporation earnings should not be reduced by imputed taxes.

The tax code specifically grants a tax advantage to S corporations because the taxable income of an S corporation is not taxed at the corporate level but is "passed through" to its shareholders to be taxed at the individual level. Due to the absence of a corporate-level tax, all other things being equal, an S corporation will possess more postcorporate tax cash flow than a C corporation. Ignoring all other factors, two otherwise identical companies will appear to have different values if one is a C corporation and one is an S corporation and their earnings stream is being valued (see Exhibit 3.3).

Exhibit 3.3 Net Income Comparison—C Corp. vs. S Corp.

C Corporation		**S Corporation**	
Revenue	$ 1,000	Revenue	$ 1,000
Expenses	800	Expenses	800
Taxable Income	200	Taxable Income	200
Taxes @ 40%	80	Taxes @ 0%	0
Net Income	$ 120	Net Income	$ 200

The question then becomes whether the mere filing of a tax election should be permitted to create substantial differences in the estimates of fair market value of like companies. In the *Gross* case, Judge Halpern answered this question in the affirmative when he stated: "[W]e believe that the principal benefit that shareholders expect from an S corporation election is a reduction in the total tax burden imposed on the enterprise. The owners expect to save money, and we see no reason why that savings ought to be ignored as a matter of course."[3] Oddly, while ruling in favor of the IRS by denying the tax adjustment of earnings, the judge ignored the position of the Service on this very issue as presented in its own publication, *IRS Valuation Training for Appeals Officers Coursebook,* last updated in 1998, which clearly states that an analyst should "adjust the earnings from the business to reflect estimated corporate income taxes that would have been payable had the Subchapter S election not been made."[4]

Similarly, in the *Wall* case, where both the taxpayer and IRS experts tax-effected S corporation earnings, Judge Beghe stated clearly that "tax-effecting an S corporation's income, and then determining the value of that income by reference to

[1] *Walter L. Gross, Jr., et ux., et al. v. Commissioner,* T.C. Memo, 1999-254, July 29, 1999.
[2] *Wall v. Commissioner,* T.C. Memo. 2001-75, March 27, 2001.
[3] *Walter L. Gross, Jr.,* T.C. Memo.
[4] Department of the Treasury, Internal Revenue Service, *Valuation Training for Appeals Officers, Training 6126-002* (Rev. 05-97), pp. 7–12.

the rates of return on taxable investments, means that an appraisal will give no value to S corporation status."[5]

Despite the court's rulings in *Gross* and *Wall,* many valuation professionals (IRS and other) continue to believe that the filing of a tax election should not create substantial differences in the estimates of fair market value of like companies. Their rationale is that in a fair market valuation, the hypothetical buyer is the universe of potential buyers and generally possesses these attributes:

- Is not a specific person
- Has reasonable knowledge of relevant facts
- Does not have unique advantages or disadvantages relative to other buyers
- Is not under compulsion to act
- Is prudent and acts rationally
- Acts with its own best interest in mind

Some of these potential buyers can readily qualify for the S election, therefore possibly gaining a unique advantage over other buyers because they can retain the tax-advantaged benefits of the company. Theoretically, these buyers would pay not only for the selling company's ability to generate income but also a premium for the S corporation tax election in place at the valuation date. However, a buyer who is willing to pay a premium for an acquired attribute of a given company is typically a strategic buyer, not a hypothetical buyer, and the value produced is investment value, not necessarily fair market value. Furthermore, it costs very little to elect S Corp status so why would someone pay a premium.

Since prudent and rational buyers only pay for those economic benefits that are transferable on the valuation date, potential buyers who do not qualify for S corporation status would not be willing to pay a premium for tax benefits that could not be realized. Consequently, these buyers would tax-effect the earnings of the company and, hence, may pay a lower price than their qualifying S corporation counterparts. However, once they buy the company, they turn into potential sellers and must factor in the risk that the next buyer may not pay any premium (they may be a C corp).

Likewise, market evidence does not suggest the existence of a premium for the tax advantages of S corporation status. Generally speaking, many S corporations are acquired by C corporations. Therefore, the tax advantages are not transferable and selling prices reflect this by tax-effecting the S corporation earnings. Since the market does not indicate the existence of an S corporation premium, and, to the extent such a premium does exist, it exists only to particular investors (i.e., exhibits characteristics of investment value), the majority of valuation professionals conclude that when valuing a controlling interest in an S corporation under a fair market value standard, the earnings of the S corporation must be adjusted for income taxes as if the company were a C corporation. See Chapters 23 and 24 for additional information on valuing pass-through entities.

DEGREE OF OWNERSHIP INTEREST

The appropriateness of certain financial statement adjustments is dependent on whether the subject size of the ownership interest is controlling or noncontrolling.

[5] *Wall v. Commissioner.*

Except for states with super majority provisions (greater than 50 percent) a controlling ownership interest is generally considered to be a voting interest of greater than 50 percent that allows the control owner to make decisions unilaterally that directly affect the earnings or capital structure of the business. Certain adjustments are normally made only in the valuation of a controlling interest unless evidence exists that the subject ownership interest may become a controlling interest in the immediate future. Unadjusted financial statements reflect the lack of ability of a noncontrolling ownership interest to affect the financial results, distributions, or destiny of the company in any way.

Examples of commonly encountered control adjustments are:

- Smoothing of excess or deficient compensation or perquisites
- Elimination of discretionary expenses and operating inefficiencies
- Removal of transactions with family or other insiders such as salary, benefits, nonmarket transactions
- Implementation of changes in capital structure that could be executed by the controlling interest

NORMALIZATION ADJUSTMENTS

Exhibits 3.4, 3.4A, and 3.5 provide detailed normalization adjustments to both the balance sheets and income statements of Ale's Distributing Company, Inc., for some items commonly encountered by the analyst, many of which have been described in the preceding paragraphs. Exhibits 3.6, 3.6A, and 3.7 provide normalized balance sheets and income statements for the five-year period analyzed.

Exhibit's 3.4 and 3.4A, and Exhibits 3.6 and 3.6A differ only in that Exhibits 3.4A and 3.6A include a normalization adjustment restating the fixed assets to fair market value. Exhibits 3.4 and 3.6 do not include this adjustment. Many analysts do not make this adjustment since industry or guideline company benchmark data do not usually have this adjustment, thus distorting comparisons to the subject company. Others think that making the adjustment results in a better comparison over the historical period analyzed. This is a decision each analyst must make. Both methods are presented here.

COMMON SIZING NORMALIZED FINANCIAL STATEMENTS

Once financial data has been normalized, analysts commonly employ an analytical methodology to identify operational trends—"common sizing" the financial statements. Common sizing involves expressing each item on the financial statements as a percentage of some base number, and is performed on both the normalized balance sheet and the normalized income statement for each period under consideration. On the balance sheet, each item is expressed as a percentage of total assets and on the income statement, each item is expressed as a percentage of sales.

Common-size financial analysis provides insight into the company's historical operating performance, facilitates an assessment of relationships between and among certain accounts, identifies certain trends or unusual items, and can be used to compare the operating performance of the subject company to its industry or to specific guideline companies. This analysis is sometimes useful before making nor-

malization adjustments in order to identify other potential adjustments, with a second normalization process then conducted. Exhibits 3.8, 3.8A, and 3.9 present common-size balance sheets and income statements of Ale's Distributing for the five-year period analyzed. Exhibit 3.8A includes the adjustment restating the fixed assets to fair market value.

Exhibit 3.4 Ale's Distributing Company, Inc.—Balance Sheet Normalization Adjustments

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Assets					
Current Assets					
Cash	$ 0	$ 0	$ 0	$ 0	$ 0
Accounts Receivable	0	0	0	0	0
Inventory[2]	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)
Other Current Assets					
Prepaid Expenses	0	0	0	0	0
Total Other Current Assets	0	0	0	0	0
Total Current Assets	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)
Fixed Assets—Net					
Fixed Assets—Cost	0	0	0	0	0
Accumulated Depreciation	0	0	0	0	0
Total Fixed Assets—Net	0	0	0	0	0
Other Assets					
Marketable Securities[1]	(1,400,000)	(1,200,000)	(1,100,000)	(1,000,000)	(900,000)
Total Other Assets	(1,400,000)	(1,200,000)	(1,100,000)	(1,000,000)	(900,000)
Total Assets	$(1,500,000)	$(1,300,000)	$(1,200,000)	$(1,100,000)	$(1,000,000)
Liabilities and Equity					
Liabilities					
Current Liabilities					
Accounts Payable	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Liabilities					
Customer Deposits	0	0	0	0	0
Accrued Expenses	0	0	0	0	0
Total Other Current Liabilities	0	0	0	0	0
Total Current Liabilities	0	0	0	0	0
Long-Term Liabilities	0	0	0	0	0
Total Liabilities	0	0	0	0	0
Equity					
Common Stock	0	0	0	0	0
Additional Paid-In Capital	0	0	0	0	0
Retained Earnings	(1,500,000)	(1,300,000)	(1,200,000)	(1,100,000)	(1,000,000)
Total Equity	(1,500,000)	(1,300,000)	(1,200,000)	(1,100,000)	(1,000,000)
Total Liabilities and Equity	(1,500,000)	$(1,300,000)	$(1,200,000)	$(1,100,000)	$(1,000,000)

Exhibit 3.4A Ale's Distributing Company, Inc.—Balance Sheet Normalization Adjustments

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Assets					
Current Assets					
Cash	$ 0	$ 0	$ 0	$ 0	$ 0
Accounts Receivable	0	0	0	0	0
Inventory[2]	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)
Other Current Assets					
Prepaid Expenses	0	0	0	0	0
Total Other Current Assets	0	0	0	0	0
Total Current Assets	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)
Fixed Assets—FMV					
Fixed Assets—Cost[3]	2,178,600	1,970,900	1,958,200	2,065,900	1,969,100
Accumulated Depreciation	0	0	0	0	0
Total Fixed Assets—Net	2,178,600	1,970,900	1,958,200	2,065,900	1,969,100
Other Assets					
Marketable Securities[1]	(1,400,000)	(1,200,000)	(1,100,000)	(1,000,000)	(900,000)
Total Other Assets	(1,400,000)	(1,200,000)	(1,100,000)	(1,000,000)	(900,000)
Total Assets	$ 678,600	$ 670,900	$ 758,200	$ 965,900	$ 969,100
Liabilities and Equity					
Liabilities					
Current Liabilities					
Accounts Payable	$ 0	$ 0	$ 0	$ 0	$ 0
Other Current Liabilities					
Customer Deposits	0	0	0	0	0
Accrued Expenses	0	0	0	0	0
Total Other Current Liabilities	0	0	0	0	0
Total Current Liabilities	0	0	0	0	0
Long-Term Liabilities	0	0	0	0	0
Total Liabilities	0	0	0	0	0
Equity					
Common Stock	0	0	0	0	0
Additional Paid-In Capital	0	0	0	0	0
Retained Earnings	678,600	670,900	758,200	965,900	969,100
Total Equity	678,600	670,900	758,200	965,900	969,100
Total Liabilities and Equity	$ 678,600	$ 670,900	$ 758,200	$ 965,900	$ 969,100

Exhibits 3.4 & 3.4A—FOOTNOTES

Normalization Adjustments—Balance Sheet:

- Unusual and Nonrecurring Items
  None
- Nonoperating Items
  Adjustment #1—Based upon analytical review, including comparisons to financial ratio benchmark data, it was determined that the Company has excess marketable securities that exceed the Company's working capital requirements.
- Nonconformance With GAAP
  Adjustment #2—Based upon discussions with management, it was discovered that the company has not properly written off obsolete inventory.
- Control Adjustment
  Adjustment #3—Based upon appraisals of the Company's land, buildings, and fixed assets, an adjustment has been made to restate the Company's fixed assets to reflect their fair market value. Note: Some analysts do not make this adjustment for comparison purposes since the benchmark data that subject companies are compared to do not usually have this adjustment made. This is a decision each analyst must make. Also, some analysts make tax adjustments to the asset values.

Exhibit 3.5 Ale's Distributing Company, Inc.—Income Statement Normalization Adjustments

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Revenues	$ 0	$ 0	$ 0	$ 0	$ 0
Cost of Goods Sold	0	0	0	0	0
Gross Profit	0	0	0	0	0
Operating Expenses					
Advertising	0	0	0	0	0
Bad Debts	0	0	0	0	0
Contributions	0	0	0	0	0
Gas & Oil Expense[3]	(6,000)	(6,000)	(6,000)	(6,000)	(6,000)
Employee Benefits	0	0	0	0	0
Insurance	0	0	0	0	0
Legal & Accounting[1]	(200,000)	0	0	0	0
Meals & Entertainment[4]	(7,500)	(7,500)	(7,500)	(7,500)	(7,500)
Office Expense	0	0	0	0	0
Other Deductions	0	0	0	0	0
Pension / Profit-Sharing	0	0	0	0	0
Promotional Expenses	0	0	0	0	0
Payroll Taxes[5]	(23,700)	(9,900)	(15,000)	(15,000)	(49,200)
Rent[6]	(45,000)	(45,000)	(3,700)	0	0
Repairs and Maintenance	0	0	0	0	0
Salaries[5]	(30,000)	(30,000)	(30,000)	(30,000)	(30,000)
Taxes & Licenses	0	0	0	0	0
Utilities & Telephone	0	0	0	0	0
Total Operating Expenses	(312,200)	(98,400)	(62,200)	(58,500)	(92,700)
Officers' Compensation[5]	(224,600)	(76,600)	(132,400)	(132,600)	(508,300)
Operating EBITDA	536,800	175,000	194,600	191,100	601,000
Depreciation and Amortization	0	0	0	0	0
Operating Income/(Loss) - EBIT	536,800	175,000	194,600	191,100	601,000
Miscellaneous Income/ (Expense)					
Interest Income[2]	0	0	0	0	0
Dividend Income[2]	(18,600)	(17,800)	(16,500)	(14,200)	(12,100)
Gain/Loss on Sale of Fixed Assets	0	0	0	0	0
Gain/Loss on Sale of Securities[2]	(10,300)	(20,400)	(21,500)	(8,700)	(25,700)
Other Income	0	0	0	0	0
Total Miscellaneous Income	(28,900)	(38,200)	(38,000)	(22,900)	(37,800)
Interest Expense	0	0	0	0	0
Pre-Tax Income	507,900	136,800	156,600	168,200	563,200
Less: Income Taxes	172,700	46,500	53,200	57,200	191,500
Net Income/(Loss)	$ 335,200	$ 90,300	$ 103,400	$ 111,000	$ 371,700

(*continues*)

Exhibit 3.5 *continued*

FOOTNOTES

Normalization Adjustment—Income Statement:

- Unusual and Nonrecurring Items

  Adjustment #1—Based upon discussions with management, it was discovered that the Company was involved in a lawsuit in 2001 that was determined to be nonrecurring in nature.
- Nonoperating Items

  Adjustment #2—Based upon analytical review, it was determined that the Company has excess marketable securities that exceed the Company's working capital requirements. Income and gains/losses attributable to the excess marketable securities have been removed from the income statement.
- Nonconformance With GAAP

  None
- Control Adjustments

  Adjustment #3—Based upon discussions with management, it was discovered that family members of the Company's owner were using Company gas cards for the purchase and use of gas in their personal vehicles for nonbusiness related travel.

  Adjustment #4—Based upon discussions with management, it was discovered that country club dues for the company's owner were being paid by the Company, even though no business meetings were ever conducted at the country club.

  Adjustment #5—Based upon analytical review and discussions with management, adjustments were made to officers' compensation, salaries, and payroll taxes in order to (1) provide for a reasonable level of compensation for officers, (2) remove payroll received by the family members of the Company's owner who performed no services for the Company, and (3) remove the payroll taxes associated with such adjustments.

  Adjustment #6—Based upon analytical review and discussions with management, it was determined that above market rent was being paid by the Company for the rental of a building owned by a related party.

RATIO ANALYSIS (QUANTITATIVE ANALYSIS)

Ratio analysis is perhaps the most commonly used tool in financial analysis. Financial ratios allow the analyst to assess and analyze the strengths and weaknesses of a given company with regard to such measures as liquidity, performance, profitability, leverage and growth, on an absolute basis and by comparison to other companies in its industry or to an industry standard. Common financial ratios, a discussion of their use, and the application to Ale's Distributing may be found in the appendix at the end of this chapter.

Two common types of ratio analyses exist: time series analysis and cross-sectional analysis. Time series analysis (commonly known as trend analysis) compares the company's ratios over a specified historical time period and identifies trends that might indicate financial performance improvement or deterioration.

Cross-sectional analysis compares a specified company's ratios to other companies or to industry standards/norms. It is most useful when the companies analyzed are reasonably comparable, i.e., business type, revenue size, product mix, degree of diversification, asset size, capital structure, markets served, geographic location, and the use of similar accounting methods. It is important to exercise professional judgment in determining which ratios to select in analyzing a given company.

Most finance textbooks calculate activity ratios and rate of return ratios based on average beginning and ending year balances. However, some benchmark data, including Risk Management Association (RMA), report ratios based only on a year-end balance.

Exhibit 3.6 Ale's Distributing Company, Inc.—Normalized Historical Balance Sheets

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Assets					
Current Assets					
Cash	$1,391,500	$1,314,600	$1,278,300	$ 920,800	$1,031,300
Accounts Receivable	2,027,100	1,599,500	1,194,900	1,000,700	762,600
Inventory	2,217,200	1,858,300	1,635,600	1,543,400	1,037,000
Other Current Assets					
Prepaid Expenses	56,600	90,100	145,600	117,200	177,900
Total Other Current Assets	56,600	90,100	145,600	117,200	177,900
Total Current Assets	5,692,400	4,862,500	4,254,400	3,582,100	3,008,800
Fixed Assets—Net					
Fixed Assets—Cost	8,256,500	8,165,800	7,854,200	7,526,400	7,157,000
Accumulated Depreciation	(5,435,100)	(5,236,700)	(5,012,400)	(4,892,300)	(4,526,100)
Total Fixed Assets—Net	2,821,400	2,929,100	2,841,800	2,634,100	2,630,900
Other Assets					
Marketable Securities	0	0	0	0	0
Total Other Assets	0	0	0	0	0
Total Assets	$8,513,800	$7,791,600	$7,096,200	$6,216,200	$5,639,700
Liabilities and Equity					
Liabilities					
Current Liabilities					
Accounts Payable	$ 237,400	$ 154,500	$ 228,100	$131,100	$226,300
Other Current Liabilities					
Customer Deposits	178,100	157,300	150,400	185,800	167,000
Accrued Expenses	465,600	463,200	439,800	395,600	310,600
Total Other Current Liabilities	643,700	620,500	590,200	581,400	477,600
Total Current Liabilities	881,100	775,000	818,300	712,500	703,900
Long-Term Liabilities	3,000,000	2,750,000	2,500,000	2,250,000	2,000,000
Total Liabilities	3,881,100	3,525,000	3,318,300	2,962,500	2,703,900
Equity					
Common Stock	50,000	50,000	50,000	50,000	50,000
Additional Paid-In Capital	150,000	150,000	150,000	150,000	150,000
Retained Earnings	4,432,700	4,066,600	3,577,900	3,053,700	2,735,800
Total Equity	4,632,700	4,266,600	3,777,900	3,253,700	2,935,800
Total Liabilities and Equity	$8,513,800	$7,791,600	$7,096,200	$6,216,200	$5,639,700

Exhibit 3.6A Ale's Distributing Company, Inc.—Normalized Historical Balance Sheets

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Assets					
Current Assets					
Cash	$ 1,391,500	$ 1,314,600	$1,278,300	$ 920,800	$1,031,300
Accounts Receivable	2,027,100	1,599,500	1,194,900	1,000,700	762,600
Inventory	2,217,200	1,858,300	1,635,600	1,543,400	1,037,000
Other Current Assets					
Prepaid Expenses	56,600	90,100	145,600	117,200	177,900
Total Other Current Assets	56,600	90,100	145,600	117,200	177,900
Total Current Assets	5,692,400	4,862,500	4,254,400	3,582,100	3,008,800
Fixed Assets—FMV					
Fixed Assets—Cost	10,435,100	10,136,700	9,812,400	9,592,300	9,126,100
Accumulated Depreciation	(5,435,100)	(5,236,700)	(5,012,400)	(4,892,300)	(4,526,100)
Total Fixed Assets—Net	5,000,000	4,900,000	4,800,000	4,700,000	4,600,000
Other Assets					
Marketable Securities	0	0	0	0	0
Total Other Assets	0	0	0	0	0
Total Assets	$10,692,400	$ 9,762,500	$9,054,400	$8,282,100	$7,608,800
Liabilities and Equity					
Liabilities					
Current Liabilities					
Accounts Payable	$ 237,400	$ 154,500	$ 228,100	$ 131,100	$ 226,300
Other Current Liabilities					
Customer Deposits	178,100	157,300	150,400	185,800	167,000
Accrued Expenses	465,600	463,200	439,800	395,600	310,600
Total Other Current Liabilities	643,700	620,500	590,200	581,400	477,600
Total Current Liabilities	881,100	775,000	818,300	712,500	703,900
Long-Term Liabilities	3,000,000	2,750,000	2,500,000	2,250,000	2,000,000
Total Liabilities	3,881,100	3,525,000	3,318,300	2,962,500	2,703,900
Equity					
Common Stock	50,000	50,000	50,000	50,000	50,000
Additional Paid-In Capital	150,000	150,000	150,000	150,000	150,000
Retained Earnings	6,611,300	6,037,500	5,536,100	5,119,600	4,704,900
Total Equity	6,811,300	6,237,500	5,736,100	5,319,600	4,904,900
Total Liabilities and Equity	$10,692,400	$ 9,762,500	$9,054,400	$8,282,100	$7,608,800

Exhibit 3.7 Ale's Distributing Company, Inc.—Normalized Historical Income Statements

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Revenues	$38,054,800	$35,497,100	$35,201,800	$34,627,900	$32,979,800
Cost of Goods Sold	28,323,200	26,389,800	26,246,500	25,779,000	24,355,800
Gross Profit	9,731,600	9,107,300	8,955,300	8,848,900	8,624,000
Operating Expenses					
Advertising	63,700	47,100	58,100	80,800	54,500
Bad Debts	6,400	10,800	7,800	13,900	2,600
Contributions	21,900	25,600	55,700	85,300	33,500
Gas & Oil Expense	90,700	83,700	79,200	80,900	69,900
Employee Benefits	483,900	463,200	451,300	470,200	433,900
Insurance	164,300	124,300	144,500	147,600	134,800
Legal & Accounting	197,500	168,900	173,900	181,300	165,600
Meals & Entertainment	41,800	53,500	51,600	68,200	50,100
Office Expense	120,400	117,900	124,400	129,300	97,600
Other Deductions	28,800	19,900	21,300	24,300	18,700
Pension / Profit-Sharing	160,000	155,000	150,000	145,000	140,000
Promotional Expenses	203,200	191,600	219,600	261,300	202,400
Payroll Taxes	424,000	419,700	471,600	436,900	423,900
Rent	120,000	120,000	10,000	0	0
Repairs and Maintenance	126,300	157,000	158,100	177,400	176,300
Salaries	3,350,400	3,344,400	3,284,200	3,269,000	2,902,700
Taxes & Licenses	124,400	119,700	116,200	140,600	109,800
Utilities & Telephone	156,700	146,800	145,900	167,200	130,100
Total Operating Expenses	5,884,400	5,769,100	5,723,400	5,879,200	5,146,400
Officers' Compensation	2,000,000	1,800,000	1,700,000	1,600,000	1,500,000
Operating EBITDA	1,847,200	1,538,200	1,531,900	1,369,700	1,977,600
Depreciation and Amortization	429,800	474,700	498,700	508,200	507,700
Operating Income/ (Loss)—EBIT	1,417,400	1,063,500	1,033,200	861,500	1,469,900
Miscellaneous Income/ (Expense)					
Interest Income	153,200	148,100	128,800	101,700	94,300
Dividend Income	0	0	0	0	0
Gain/Loss on Sale of Fixed Assets	20,800	22,300	124,700	5,600	11,200
Gain/Loss on Sale of Securities	0	0	0	0	0
Other Income	5,600	5,100	5,300	3,800	2,500
Total Miscellaneous Income	179,600	175,500	258,800	111,100	108,000
Interest Expense	231,400	210,300	189,600	171,200	151,200
Pre-Tax Income	1,365,600	1,028,700	1,102,400	801,400	1,426,700
Less: Income Taxes	464,300	349,700	374,800	272,500	485,100
Net Income/(Loss)	$ 901,300	$ 679,000	$ 727,600	$ 528,900	$ 941,600

Exhibit 3.8 Ale's Distributing Company, Inc.—Normalized Historical Balance Sheets—Common Size

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Assets					
Current Assets					
Cash	16.3%	16.9%	18.0%	14.8%	18.3%
Accounts Receivable	23.8%	20.5%	16.8%	16.1%	13.5%
Inventory	26.0%	23.9%	23.0%	24.8%	18.4%
Other Current Assets					
Prepaid Expenses	0.7%	1.2%	2.1%	1.9%	3.2%
Total Other Current Assets	0.7%	1.2%	2.1%	1.9%	3.2%
Total Current Assets	66.9%	62.4%	60.0%	57.6%	53.4%
Fixed Assets—Net					
Fixed Assets—Cost	97.0%	104.8%	110.7%	121.1%	126.9%
Accumulated Depreciation	-63.8%	-67.2%	-70.6%	-78.7%	-80.3%
Total Fixed Assets—Net	33.1%	37.6%	40.0%	42.4%	46.6%
Other Assets					
Marketable Securities	0%	0%	0%	0%	0%
Total Other Assets	0%	0%	0%	0%	0%
Total Assets	100.0%	100.0%	100.0%	100.0%	100.0%
Liabilities and Equity					
Liabilities					
Current Liabilities					
Accounts Payable	2.8%	2.0%	3.2%	2.1%	4.0%
Other Current Liabilities					
Customer Deposits	2.1%	2.0%	2.1%	3.0%	3.0%
Accrued Expenses	5.5%	5.9%	6.2%	6.4%	5.5%
Total Other Current Liabilities	7.6%	8.0%	8.3%	9.4%	8.5%
Total Current Liabilities	10.3%	9.9%	11.5%	11.5%	12.5%
Long-Term Liabilities	35.2%	35.3%	35.2%	36.2%	35.5%
Total Liabilities	45.6%	45.2%	46.8%	47.7%	47.9%
Equity					
Common Stock	0.6%	0.6%	0.7%	0.8%	0.9%
Additional Paid-In Capital	1.8%	1.9%	2.1%	2.4%	2.7%
Retained Earnings	52.1%	52.2%	50.4%	49.1%	48.5%
Total Equity	54.4%	54.8%	53.2%	52.3%	52.1%
Total Liabilities and Equity	100.0%	100.0%	100.0%	100.0%	100.0%

Exhibit 3.8A Ale's Distributing Company, Inc.—Normalized Historical Balance Sheets—Common Size

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Assets					
Current Assets					
Cash	13.0%	13.5%	14.1%	11.1%	13.6%
Accounts Receivable	19.0%	16.4%	13.2%	12.1%	10.0%
Inventory	20.7%	19.0%	18.1%	18.6%	13.6%
Other Current Assets					
Prepaid Expenses	0.5%	0.9%	1.6%	1.4%	2.3%
Total Other Current Assets	0.5%	0.9%	1.6%	1.4%	2.3%
Total Current Assets	53.2%	49.8%	47.0%	43.3%	39.5%
Fixed Assets—FMV					
Fixed Assets—Cost	97.6%	103.8%	108.4%	115.8%	119.9%
Accumulated Depreciation	-50.8%	-53.6%	-55.4%	-59.1%	-59.5%
Total Fixed Assets—Net	46.8%	50.2%	53.0%	56.7%	60.5%
Other Assets					
Marketable Securities	0%	0%	0%	0%	0%
Total Other Assets	0%	0%	0%	0%	0%
Total Assets	100.0%	100.0%	100.0%	100.0%	100.0%
Liabilities and Equity					
Liabilities					
Current Liabilities					
Accounts Payable	2.2%	1.6%	2.5%	1.6%	3.0%
Other Current Liabilities					
Customer Deposits	1.7%	1.6%	1.7%	2.2%	2.2%
Accrued Expenses	4.4%	4.7%	4.9%	4.8%	4.1%
Total Other Current Liabilities	6.0%	6.4%	6.5%	7.0%	6.3%
Total Current Liabilities	8.2%	7.9%	9.0%	8.6%	9.3%
Long-Term Liabilities	28.1%	28.2%	27.6%	27.2%	26.3%
Total Liabilities	36.3%	36.1%	36.6%	35.8%	35.5%
Equity					
Common Stock	0.5%	0.5%	0.6%	0.6%	0.7%
Additional Paid-In Capital	1.4%	1.5%	1.7%	1.8%	2.0%
Retained Earnings	61.8%	61.8%	61.1%	61.8%	61.8%
Total Equity	63.7%	63.9%	63.4%	64.2%	64.5%
Total Liabilities and Equity	100.0%	100.0%	100.0%	100.0%	100.0%

Exhibit 3.9 Ale's Distributing Company, Inc.—Normalized Historical Income Statements—Common Size

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Revenues	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of Goods Sold	74.4%	74.3%	74.6%	74.4%	73.9%
Gross Profit	25.6%	25.7%	25.4%	25.6%	26.1%
Operating Expenses					
Advertising	0.2%	0.1%	0.2%	0.2%	0.2%
Bad Debts	0.0%	0.0%	0.0%	0.0%	0.0%
Contributions	0.1%	0.1%	0.2%	0.2%	0.1%
Gas & Oil Expense	0.2%	0.2%	0.2%	0.2%	0.2%
Employee Benefits	1.3%	1.3%	1.3%	1.4%	1.3%
Insurance	0.4%	0.4%	0.4%	0.4%	0.4%
Legal & Accounting	0.5%	0.5%	0.5%	0.5%	0.5%
Meals & Entertainment	0.1%	0.2%	0.1%	0.2%	0.2%
Office Expense	0.3%	0.3%	0.4%	0.4%	0.3%
Other Deductions	0.1%	0.1%	0.1%	0.1%	0.1%
Pension / Profit-Sharing	0.4%	0.4%	0.4%	0.4%	0.4%
Promotional Expenses	0.5%	0.5%	0.6%	0.8%	0.6%
Payroll Taxes	1.1%	1.2%	1.3%	1.3%	1.3%
Rent	0.3%	0.3%	0.0%	0.0%	0.0%
Repairs and Maintenance	0.3%	0.4%	0.4%	0.5%	0.5%
Salaries	8.8%	9.4%	9.3%	9.4%	8.8%
Taxes & Licenses	0.3%	0.3%	0.3%	0.4%	0.3%
Utilities & Telephone	0.4%	0.4%	0.4%	0.5%	0.4%
Total Operating Expenses	15.5%	16.3%	16.3%	17.0%	15.6%
Officers' Compensation	5.3%	5.1%	4.8%	4.6%	4.5%
Operating EBITDA	4.9%	4.3%	4.4%	4.0%	6.0%
Depreciation and Amortization	1.1%	1.3%	1.4%	1.5%	1.5%
Operating Income/(Loss)—EBIT	3.7%	3.0%	2.9%	2.5%	4.5%
Miscellaneous Income/(Expense)					
Interest Income	0.4%	0.4%	0.4%	0.3%	0.3%
Dividend Income	0.0%	0.0%	0.0%	0.0%	0.0%
Gain/Loss on Sale of Fixed Assets	0.1%	0.1%	0.4%	0.0%	0.0%
Gain/Loss on Sale of Securities	0.0%	0.0%	0.0%	0.0%	0.0%
Other Income	0.0%	0.0%	0.0%	0.0%	0.0%
Total Miscellaneous Income	0.5%	0.5%	0.7%	0.3%	0.3%
Interest Expense	0.6%	0.6%	0.5%	0.5%	0.5%
Pre-Tax Income	3.6%	2.9%	3.1%	2.3%	4.3%
Less: Income Taxes	1.2%	1.0%	1.1%	0.8%	1.5%
Net Income/(Loss)	2.4%	1.9%	2.1%	1.5%	2.9%

ValTip

The valuation report should provide substantive commentary regarding methods and ratios chosen and results of the analysis.

Exhibit 3.10 presents ratios prepared with average balance sheet data with fixed assets at historical costs. Exhibit 3.10A includes a comparison to RMA data; thus Ale's ratios are computed year-end, again using historical costs for the fixed assets. Exhibit 3.10A is used in the detailed ratio analysis appended to this chapter. Exhibit 3.10B presents the ratios using average balance sheet amounts with the adjustment restating the fixed assets to fair market value.

ValTip

Analysts should not mix year-end data with beginning- and ending-year average data when preparing comparisons of the subject company to industry benchmark data and ratios.

COMPARATIVE ANALYSIS

Comparative analysis is a valuable tool for highlighting differences between the subject company's historical performance and industry averages, pointing out relative operating strengths and weaknesses of the subject company as compared to its peers, assessing management effectiveness, and identifying areas where the company is outperforming or underperforming the industry.

Comparative analysis is performed by comparing the ratios of the subject company to industry ratios taken from commonly accepted sources of comparative financial data.

Widely used sources for comparative financial data include:

- Almanac of Business and Industrial Financial Ratios (*www.prenhall.com*)
- BizMiner (*www.bizminer.com*)
- Financial Ratio Analyst (*www.viahome.com*)
- Financial Studies of the Small Business (*www.fvafssb.com*)
- IRS Corporate Financial Ratios (*www.wiley.com*)
- IRS Corporate Ratios and IRS-CALC (*www.saibooks.com/fin.html*)
- Risk Management Association (RMA) Annual Statement Studies (*www.rmahg.org*)

The above publications vary in the depth and breadth of data provided. However, most of the sample data is extracted from corporate federal tax filings. RMA obtains its data from financial statements provided to member banks by loan customers. *Financial Studies of the Small Business* obtains small-company financial statements from certified public accounting firms nationwide.

Exhibit 3.10 Ale's Distributing Company, Inc.—Comparative Ratio Analysis

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Liquidity Ratios					
Current Ratio	6.5	6.3	5.2	5.0	4.3
Quick (Acid-Test) Ratio	3.9	3.8	3.0	2.7	2.5
Activity Ratios					
Accounts Receivable Turnover	21.0	25.4	32.1	39.3	N/A
Days Outstanding In A/R	17.4	14.4	11.4	9.3	N/A
Inventory Turnover	13.9	15.1	16.5	20.0	N/A
Sales To Net Working Capital	8.6	9.4	11.2	13.4	N/A
Total Asset Turnover	4.7	4.8	5.3	5.8	N/A
Fixed Asset Turnover	13.2	12.3	12.9	13.2	N/A
Leverage Ratios					
Total Debt to Total Assets	0.5	0.5	0.5	0.5	0.5
Total Equity to Total Assets	0.5	0.5	0.5	0.5	0.5
Long-Term Debt to Equity	0.6	0.6	0.6	0.7	0.7
Total Debt to Equity	0.8	0.8	0.9	0.9	0.9
Profitability Ratios					
Gross Profit Margin	25.6%	25.7%	25.4%	25.6%	26.1%
Operating Profit Margin	3.7%	3.0%	2.9%	2.5%	4.5%
Rate Of Return Ratios					
Return On Average Equity	20.3%	16.9%	20.7%	17.1%	N/A
Return On Average Investment	14.4%	12.3%	14.5%	12.3%	N/A
Return On Average Total Assets	12.9%	11.0%	12.8%	10.8%	N/A
Growth Rates (Cumulative)					
Sales—Avg. Growth	3.68%	2.50%	3.33%	5.00%	N/A
Sales—CAGR	3.64%	2.48%	3.31%	5.00%	N/A
Gross Profit—Avg. Growth	3.09%	1.84%	1.90%	2.61%	N/A
Gross Profit—CAGR	3.07%	1.83%	1.90%	2.61%	N/A
Operating Profit—Avg. Growth	3.69%	-6.18%	-10.73%	-41.39%	N/A
Operating Profit—CAGR	-0.91%	-10.23%	-16.16%	-41.39%	N/A

Financial Ratios based on Normalized Historical Balance Sheets and Normalized Historical Income Statements.
Activity and Rate of Return Ratios are calculated using average end of year balance sheet values and historical fixed asset values.

ValTip

To use benchmark industry ratios appropriately, analysts must be familiar with their scope and limitations as well as with the differences among them regarding data presentation and computation methods.

Exhibits 3.11, 3.11A, and 3.12 present comparative balance sheets and income statements for the same five-year period. Exhibit 3.11A includes the restatement of the fixed assets to fair market value.

Exhibit 3.10A Ale's Distributing Company, Inc.—Comparative Ratio Analysis

	RMA 2001	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Liquidity Ratios						
Current Ratio	1.4	6.5	6.3	5.2	5.0	4.3
Quick (Acid-Test) Ratio	0.6	3.9	3.8	3.0	2.7	2.5
Activity Ratios						
Accounts Receivable Turnover	86.5	18.8	22.2	29.5	34.6	43.2
Days Outstanding In A/R	4.2	19.4	16.4	12.4	10.5	8.4
Inventory Turnover	18.0	12.8	14.2	16.0	16.7	23.5
Sales to Net Working Capital	37.6	7.9	8.7	10.2	12.1	14.3
Total Asset Turnover	3.9	4.5	4.6	5.0	5.6	5.8
Fixed Asset Turnover	21.5	13.5	12.1	12.4	13.1	12.5
Leverage Ratios						
Total Debt to Total Assets	0.6	0.5	0.5	0.5	0.5	0.5
Total Equity to Total Assets	0.4	0.5	0.5	0.5	0.5	0.5
Long-Term Debt to Equity	0.7	0.6	0.6	0.6	0.7	0.7
Total Debt to Equity	1.5	0.8	0.8	0.9	0.9	0.9
Profitability Ratios						
Gross Profit Margin	24.0%	25.6%	25.7%	25.4%	25.6%	26.1%
Operating Profit Margin	3.7%	3.7%	3.0%	2.9%	2.5%	4.5%
Rate Of Return Ratios	NOTE 1					
Pre-tax Return On Equity	35.7%	29.5%	24.1%	29.2%	24.6%	48.6%
Pre-tax Return On Total Assets	10.3%	16.0%	13.2%	15.5%	12.9%	25.3%
Growth Rates (Cumulative)						
Sales—Avg. Growth	NOTE 2	3.68%	2.50%	3.33%	5.00%	N/A
Sales—CAGR	NOTE 2	3.64%	2.48%	3.31%	5.00%	N/A
Gross Profit—Avg. Growth	NOTE 2	3.09%	1.84%	1.90%	2.61%	N/A
Gross Profit—CAGR	NOTE 2	3.07%	1.83%	1.90%	2.61%	N/A
Operating Profit—Avg. Growth	NOTE 2	3.69%	-6.18%	-10.73%	-41.39%	N/A
Operating Profit—CAGR	NOTE 2	-0.91%	-10.23%	-16.16%	-41.39%	N/A

Financial Ratios based on Normalized Historical Balance Sheets and Normalized Historical Income Statements.
Ratios are calculated using end of year balance sheet values and historical fixed asset values.
Subject SIC Code = 5181 (Beer & Ale).
RMA Code = 5181 (Beer & Ale)—$25MM and Over Sales Median Ratios.
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Note 1—RMA does not provide data in regards to After-Tax Returns on Equity, Investment, or Total Assets.
Note 2—RMA does not provide Average Annual Growth Rates or Compounded Annual Growth Rates (CAGR).

Exhibit 3.10B Ale's Distributing Company, Inc.—Comparative Ratio Analysis

	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Liquidity Ratios					
Current Ratio	6.5	6.3	5.2	5.0	4.3
Quick (Acid-Test) Ratio	3.9	3.8	3.0	2.7	2.5
Activity Ratios					
Accounts Receivable Turnover	21.0	25.4	32.1	39.3	N/A
Days Outstanding In A/R	17.4	14.4	11.4	9.3	N/A
Inventory Turnover	13.9	15.1	16.5	20.0	N/A
Sales To Net Working Capital	8.6	9.4	11.2	13.4	N/A
Total Asset Turnover	3.7	3.8	4.1	4.4	N/A
Fixed Asset Turnover	7.7	7.3	7.4	7.4	N/A
Leverage Ratios					
Total Debt to Total Assets	0.4	0.4	0.4	0.4	0.4
Total Equity to Total Assets	0.6	0.6	0.6	0.6	0.6
Long-Term Debt to Equity	0.4	0.4	0.4	0.4	0.4
Total Debt to Equity	0.6	0.6	0.6	0.6	0.6
Profitability Ratios					
Gross Profit Margin	25.6%	25.7%	25.4%	25.6%	26.1%
Operating Profit Margin	3.7%	3.0%	2.9%	2.5%	4.5%
Rate Of Return Ratios					
Return On Average Equity	13.8%	11.3%	13.2%	10.3%	N/A
Return On Average Investment	11.2%	9.5%	10.8%	8.9%	N/A
Return On Average Total Assets	10.3%	8.7%	9.8%	8.1%	N/A
Growth Rates (Cumulative)					
Sales—Avg. Growth	3.68%	2.50%	3.33%	5.00%	N/A
Sales—CAGR	3.64%	2.48%	3.31%	5.00%	N/A
Gross Profit—Avg. Growth	3.09%	1.84%	1.90%	2.61%	N/A
Gross Profit—CAGR	3.07%	1.83%	1.90%	2.61%	N/A
Operating Profit—Avg. Growth	3.69%	-6.18%	-10.73%	-41.39%	N/A
Operating Profit—CAGR	-0.91%	-10.23%	-16.16%	-41.39%	N/A

Financial Ratios based on Normalized Historical Balance Sheets and Normalized Historical Income Statements.
Activity and Rate of Return Ratios are calculated using average balance sheet values and adjusted fixed asset values.

RISK ANALYSIS (QUALITATIVE ANALYSIS)

Ratio and other quantitative analyses provide the analyst with information about the company relative to its peers. However, ratios do not inform the analyst as to why the observed results occurred, knowledge that is essential to the understanding of business risk and the probability that a company's estimated future economic benefits will be realized.

As a company operates on a day-to-day basis, it and its competitors are affected by external forces that require both management and the analyst to conduct thorough risk analyses. The disciplines of strategic management and organizational theory provide useful models by which to conduct such risk analyses.

Exhibit 3.11 Ale's Distributing Company, Inc.—Comparative Balance Sheets

	RMA 2001	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Assets						
Current Assets						
Cash & Equivalents	11.6%	16.3%	16.9%	18.0%	14.8%	18.3%
Accounts Receivable	10.9%	23.8%	20.5%	16.8%	16.1%	13.5%
Inventory	19.7%	26.0%	23.9%	23.0%	24.8%	18.4%
Other Current Assets	2.7%	0.7%	1.2%	2.1%	1.9%	3.2%
Total Current Assets	44.9%	66.8%	62.5%	59.9%	57.6%	53.4%
Fixed Assets (Cost)—Net	23.8%	33.1%	37.6%	40.0%	42.4%	46.6%
Intangibles—Net	20.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Non-Current Assets	10.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Assets	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Liabilities and Equity						
Liabilities						
Current Liabilities						
Accounts Payable	10.9%	2.8%	2.0%	3.2%	2.1%	4.0%
Short Term Notes Payable	7.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Current Maturity LT Debt	4.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Current Liabilities	8.4%	7.6%	8.0%	8.3%	9.4%	8.5%
Total Current Liabilities	31.1%	10.3%	9.9%	11.5%	11.5%	12.5%
Long-Term Liabilities	25.8%	35.2%	35.3%	35.2%	36.2%	35.5%
Other Non-Current Liabilities	3.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Liabilities	60.6%	45.6%	45.2%	46.8%	47.7%	47.9%
Total Equity	39.4%	54.4%	54.8%	53.2%	52.3%	52.1%
Total Liabilities and Equity	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Percentages based on Normalized Historical Balance Sheets.
Subject SIC Code = 5181 (Beer & Ale).
RMA Code = 5181 (Beer & Ale)—$25MM and Over Sales Median Ratios.
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Industry Structure Analysis—the Porter Model

Michael Porter of Harvard Business School developed an analytical approach known as The Porter Model by which to analyze and assess company risk associated with industry structure.[6] Porter divides industry structure into five forces:

1. Rivalry between current incumbents
2. Threat of new entrants

[6] "How Competitive Forces Shape Strategy," *Harvard Business Review* (May–June 1979), pp. 137–145.

Exhibit 3.11A Ale's Distributing Company, Inc.—Comparative Balance Sheets

	RMA 2001	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Assets						
Current Assets						
Cash & Equivalents	11.6%	13.0%	13.5%	14.1%	11.1%	13.6%
Accounts Receivable	10.9%	19.0%	16.4%	13.2%	12.1%	10.0%
Inventory	19.7%	20.7%	19.0%	18.1%	18.6%	13.6%
Other Current Assets	2.7%	0.5%	0.9%	1.6%	1.4%	2.3%
Total Current Assets	44.9%	53.2%	49.8%	47.0%	43.2%	39.5%
Fixed Assets—Net*	23.8%	46.8%	50.2%	53.0%	56.7%	60.5%
Intangibles—Net	20.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Non-Current Assets	10.9%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Assets	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Liabilities and Equity						
Liabilities						
Current Liabilities						
Accounts Payable	10.9%	2.2%	1.6%	2.5%	1.6%	3.0%
Short Term Notes Payable	7.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Current Maturity LT Debt	4.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Other Current Liabilities	8.4%	6.0%	6.4%	6.5%	7.0%	6.3%
Total Current Liabilities	31.1%	8.2%	7.9%	9.0%	8.6%	9.3%
Long-Term Liabilities	25.8%	28.1%	28.2%	27.6%	27.2%	26.3%
Other Non-Current Liabilities	3.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Total Liabilities	60.6%	36.3%	36.1%	36.6%	35.8%	35.5%
Total Equity	39.4%	63.7%	63.9%	63.4%	64.2%	64.5%
Total Liabilities and Equity	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Percentages based on Normalized Historical Balance Sheets.
Subject SIC Code = 5181 (Beer & Ale).
RMA Code = 5181 (Beer & Ale)—$25MM and Over Sales Median Ratios.
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* Fixed Assets Adjusted to Fair Market Value.

3. Bargaining power of customers
4. Bargaining power of suppliers
5. The threat of substitute products

This model, used thoughtfully in a valuation analysis, can provide valuable information regarding the relative risk of the future profitability for the subject company.

The following is a brief example of the five forces of the Porter Model as applied to Ale's Distributing:

1. *Rivalry between current incumbents.* The industry is segmented by distributorships affiliated with one or more of the three major domestic manufacturers. As a result, competition between distributorships within a given region or sales territory is intense.

Exhibit 3.12 Ale's Distributing Company, Inc.—Comparative Income Statements

	RMA 2001	12/31/01	12/31/00	12/31/99	12/31/98	12/31/97
Revenues	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Cost of Goods Sold	76.0%	74.4%	74.3%	74.6%	74.4%	73.9%
Gross Profit	24.0%	25.6%	25.7%	25.4%	25.6%	26.1%
Operating Expenses	20.2%	21.9%	22.7%	22.5%	23.1%	21.6%
Operating Profit	3.8%	3.7%	3.0%	2.9%	2.5%	4.5%
Other Income / (Expenses)—Net	-0.5%	-0.1%	-0.1%	0.2%	-0.2%	-0.2%
Pre-Tax Profit	3.3%	3.6%	2.9%	3.1%	2.3%	4.3%

Percentages based on Normalized Historical Income Statements.
Subject SIC Code = 5181 (Beer & Ale).
RMA Code = 5181 (Beer & Ale)—$25MM and Over Sales Median Ratios.
Risk Management Association, Philadelphia, PA, 2001 (used with permission). © 2002 by RMA—The Risk Management Association. All rights reserved. No part of this table may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system without permission in writing from RMA—The Risk Management Association. Please refer to *www.rmahq.org* for further warranty, copyright and use of data information.

2. *Threat of new entrants*. Since all distributorships operate under agreements with one or more of the three dominant domestic manufacturers and are assigned defined sales territories, the threat of new entrants into the marketplace is minimal.
3. *Bargaining power of customers*. Due to the intensely competitive nature of the business, customers tend to possess significant bargaining power. Customers in the on-premise segment of the market require high service levels and on-site displays (bar signage, etc.). Off-premise customers also require high service levels, including assistance in product placement and point-of-sale displays to obtain higher product turn in exchange for greater shelf space.
4. *Bargaining power of suppliers*. Distribution agreements with all manufacturers are extremely restrictive. The manufacturer sets product pricing, and distributor inventories are determined by the manufacturer's need to move product, given its short shelf life.
5. *Threat of substitute products*. The increased acceptance of premium import products from foreign beer manufacturers poses a potential threat to future unit sales (on a case-equivalent basis) of domestic distributors.

Industry Conduct—the McKinsey 7-S Model

Industry conduct, and its impact on a given company, also can be analyzed and assessed using models such as McKinsey and Company's 7-S framework,[7] which analyze competitors using seven categories:

[7] Robert H. Waterman, Jr., Thomas J. Peters, and Julien R. Phillips, "Structure Is Not Organization," *Business Horizons* (June 1980), pp. 14–26.

1. Strategy
2. Structure
3. Systems
4. Skills
5. Staff
6. Style
7. Superordinate goals

The following is a brief example analyzing Ale's Distributing ability to remain flexible and to adapt to change in the seven categories:

1. *Strategy*. In response to the competitive nature of the industry and profit pressure exerted by the manufacturer by the transferring of certain expenses to distributors, Ale's is looking seriously into acquiring neighboring distributorships (wholesaler consolidation), a strategy encouraged by the manufacturer.
2. *Structure*. As a sales-focused company, Ale's has decentralized the sales process, training its drivers as well as its on-premise and off-premise sales staff to create unique value to the customer by consulting with the customer on product placement, point-of-sale strategy, and inventory management.
3. *Systems*. Ale's possesses sophisticated sales training systems, including its involvement as a beta test site for the manufacturer's nationwide interactive satellite sales network, making it one of the more technologically advanced distributorships in the wholesaler network.
4. *Skills*. Ale's possesses the most experienced sales and warehousing staff of any distributor within a 75-mile radius, giving the company an enormous competitive advantage.
5. *Staff*. Ale's personnel exhibit great pride in their product, to the point of identifying closely with the manufacturer and its national advertising presence, with a deep conviction that they market the finest product in the industry.
6. *Style*. Top management exudes teamwork in everything it does, a feeling that pervades the entire organization, resulting in a remarkably cohesive and satisfied workforce.
7. *Superordinate goals*. Ale's operates on the fundamental principal that is best expressed in its president's motto: "Insuring our customer's success will insure our success." The company, therefore, looks beyond the sales mentality to focus on providing value to the customer that sets it apart from its competition.

MACROENVIRONMENTAL ANALYSIS

Further removed from the subject company than industry forces but still affecting it significantly, are five macroenvironmental sources of risk[8]:

1. Technological risk
2. Sociocultural risk

[8] Adapted from Liam Fahey and V. K. Narayanan, *Macroenvironmental Analysis for Strategic Management* (St. Paul: West Publishing Co., 1986), p. 29; and from Michael A. Hitt, R. Duane Ireland, and Robert E. Hoskisson, *Strategic Management: Competitiveness and Globalization,* 3rd ed. (Cincinnati: South Western Publishing Co., 1999), pp. 50–60.

3. Demographic risk
4. Political risk
5. Global risk

While the company has little or no influence on these risk factors, an assessment of them can be critical in determining the company's (and industry's) future profitability. Shifts in one or more of these risk factors can (and often do) have a material effect on an industry or a company's future fortunes. Therefore, it is prudent for analysts to provide a thorough analysis of such factors and include it in the body of the valuation report.

Our analysis of the impact of five macroenvironmental risk factors on Ale's revealed:

1. *Technological risk*. The company is recognized as a cutting-edge distributor by its competition and its supplier. It has harnessed new technology to track all delivery vehicles at all times, to maximize route organization, and to insure productivity.
2. *Sociocultural risk*. Consumer trends toward premium import products pose a potential risk to the company's product as these gain a stronger foothold in the domestic market.
3. *Demographic risk*. The company's territory is composed of three mature counties that possess an aging population with little future growth prospects. Since the company's product is preferred by younger consumers, this is a threat to the company's ability to maintain its past earnings stream.
4. *Political risk*. The alcohol industry watched the federal legal action against the tobacco industry with interest, and fears of future regulation or judicial action exist.
5. *Global risk*. The three major domestic manufacturers are fighting to make inroads into the global marketplace, with European counterparts looking to the U.S. marketplace to claim market share from existing competitors.

APPENDIX—COMMONLY USED FINANCIAL RATIOS APPLICATION TO ALE'S DISTRIBUTING

This section is neither a comprehensive presentation of all available ratios nor a list of ratios that must be utilized on every valuation engagement. The analyst must use informed judgment to determine which ratios are appropriate for a given valuation engagement. These are examples of some more common ratios.

Many analysts recommend the use of beginning-year and ending-year averages when computing the denominator of such ratios as inventory turnover, sales to net working capital, and sales to total assets. That is how these ratios are presented and explained below. In the analysis of Ale's, we also have used year-end balance sheet amounts, since that is how the comparative data, RMA, is presented.

Liquidity Ratios

Liquidity ratios measure a company's ability to meet short-term obligations with short-term assets. These ratios also help identify an excess or shortfall of current assets necessary to meet operating expenses.

Current Ratio

$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$

The current ratio is the most commonly used liquidity ratio. Normally, the current ratio of the subject company is compared to industry averages to gain insight into the company's ability to cover its current obligations with its current asset base.

Quick (Acid-Test) Ratio

$$\frac{\text{Cash + Cash Equivalents + Short-term Investments + Accounts Receivable}}{\text{Current Liabilities}}$$

The quick ratio is a more conservative ratio in that it measures the company's ability to meet current obligations with only those assets that can be readily liquidated. As with the current ratio, industry norms generally serve as the base for drawing analytical conclusions.

Application to Ale's

The liquidity ratios for Ale's have been steadily increasing during the five-year period analyzed. Ale's current ratio has increased from 4.3 at December 31, 1997, to 6.5 at December 31, 2001. Ale's quick ratio has increased from 2.5 at December 31, 1997, to 3.9 at December 31, 2001. The median current and quick ratios for comparable companies within the industry were 1.4 and 0.6, respectively. Thus, it appears the company is in a much stronger financial position to meet its current obligations as compared to its industry peers. It also indicates that Ale's is less leveraged (current liabilities) than its peer group.

Activity Ratios

Activity ratios, also known as efficiency ratios, provide an indication as to how efficiently the company is using its assets. More efficient asset utilization indicates strong management and generally results in higher value to equity owners of the business. Additionally, activity ratios describe the relationship between the company's level of operations and the assets needed to sustain the activity.

Accounts Receivable Turnover

$$\frac{\text{Annual Sales}}{\text{Average Accounts Receivable}}$$

Accounts receivable turnover measures the efficiency with which the company manages the collection side of the cash cycle.

Days Outstanding in Accounts Receivables

$$\frac{365}{\text{A/R Turnover}}$$

The average number of days outstanding of credit sales measures the effectiveness of the company's credit extension and collection policies.

Inventory Turnover

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Inventory turnover measures the efficiency with which the company manages the investment / inventory side of the cash cycle. A higher number of turnovers indicates the company is converting inventory into accounts receivable at a faster pace, thereby shortening the cash cycle and increasing the cash flow available for shareholder returns.

Sales to Net Working Capital

$$\frac{\text{Sales}}{\text{Average Net Working Capital}}$$

Sales to net working capital measures the ability of company management to drive sales with minimal net current asset employment. A higher measure indicates efficient management of the company's net working capital without sacrificing sales volume to obtain it.

Total Asset Turnover

$$\frac{\text{Sales}}{\text{Average Total Assets}}$$

Total asset turnover measures the ability of company management to efficiently utilize the total asset base of the company to drive sales volume.

Fixed Asset Turnover

$$\frac{\text{Sales}}{\text{Average Fixed Assets}}$$

Sales to fixed assets measures the ability of company management to generate sales volume from the company's fixed asset base.

Application to Ale's

Four of the five activity ratios for Ale's have steadily declined during the five-year period analyzed. The only activity ratio to increase during the five-year period was Ale's fixed asset turnover.

Ale's accounts receivable turnover has declined from 43.2 turns at December 31, 1997, to 18.8 turns at December 31, 2001. This decline in accounts receivable turnover has resulted in an increase in the average collection period of accounts receivable from 8.4 days at December 31, 1997, to 19.4 days at December 31, 2001. Ale's inventory turnover has declined from 23.5 turns at December 31, 1997, to 12.8 turns at December 31, 2001. The declines in accounts receivable turnover and inventory turnover indicate that Ale's management of these critical assets has slipped considerably during the period analyzed. The median accounts receivable turnover and inventory turnover for comparable companies within the industry were 86.5 turns and 18.0 turns, respectively. Consequently, Ale's has clearly fallen below its industry peers in its management of major working capital components. If this trend continues, Ale's working capital could become significantly strained and become an obstacle to future growth.

Ale's sales to net working capital turnover has declined from 14.3 turns at December 31, 1997, to 7.9 turns at December 31, 2001. The median sales to net working capital turnover for comparable companies within the industry was 37.6 turns. This decline mirrors the problems in accounts receivable and inventory.

A review of the Ale's total asset turnover indicates a decline from 5.8 turns at December 31, 1997, to 4.5 turns at December 31, 2001. The industry-comparable total asset turnover was 3.9 turns. Ale's fixed asset turnover actually has increased from 12.5 turns at December 31, 1997, to 13.5 turns at December 31, 2001. However, Ale's fixed asset turnover of 13.5 turns at December 31, 2001, is far below the median fixed asset turnover for comparable companies within the industry of 21.5 turns. These activity ratios suggest an increase in the risk associated with an investment in Ale's common stock. Additional due diligence is necessary to determine the cause of these potential problems.

Leverage Ratios

Leverage ratios, which are for the most part balance sheet ratios, assist the analyst in determining the solvency of a company. They provide an indication of a company's ability to sustain itself in the face of economic downturns.

Leverage ratios also measure the exposure of the creditors relative to the shareholders of a given company. Consequently, they provide valuable insight into the relative risk of the company's stock as an investment.

Total Debt to Total Assets

$$\frac{\text{Total Debt}}{\text{Total Assets}}$$

This ratio measures the total amount of assets funded by all sources of debt capital.

Total Equity to Total Assets

$$\frac{\text{Total Equity}}{\text{Total Assets}}$$

This ratio measures the total amount of assets funded by all sources of equity capital. It can also be computed as one minus the total debt to total assets ratio.

Long-term Debt to Equity

$$\frac{\text{Long term Debt}}{\text{Total Equity}}$$

This ratio expresses the relationship between long-term, interest-bearing debt and equity. Since interest-bearing debt is a claim on future cash flow that would otherwise be available for distribution to shareholders, this ratio measures the risk that future dividends or distributions will or will not occur.

Total Debt to Equity

$$\frac{\text{Total Debt}}{\text{Total Equity}}$$

This ratio measures the degree to which the company has balanced the funding of its operations and asset base between debt and equity sources. In attempting to lower the cost of capital, a company generally may increase its debt burden and hence its risk.

Application to Ale's

The leverage ratios for Ale's have remained fairly steady during the five-year period analyzed. Ale's total debt to total asset ratio has remained at 0.5 for all five years. Ale's total equity to total asset ratio has also remained stable at 0.5 for all five years. The median total debt to total asset ratio for comparable companies within the industry was 0.6. Ale's total debt to equity ratio has been 0.9 to 0.8 historically,

well below the industry average of 1.5. This indicates that the company tends to finance growth with more equity than debt.

Profitability Ratios

Profitability ratios measure the ability of a company to generate returns for its shareholders. Profitability ratios also measure financial performance and management strength.

Gross Profit Margin

$$\frac{\text{Gross Profit}}{\text{Net Sales}}$$

This ratio measures the ability of the company to generate an acceptable markup on its product in the face of competition. It is most useful when compared to a similarly computed ratio for comparable companies or to an industry standard.

Operating Profit Margin

$$\frac{\text{Operating Profit}}{\text{Net Sales}}$$

This ratio measures the ability of the company to generate profits to cover and to exceed the cost of operations. It is also most useful when compared to comparable companies or to an industry standard.

Application to Ale's

The profitability ratios for Ale's have declined during the five-year period analyzed. Ale's gross profit margin has declined from 26.1 percent at December 31, 1997, to 25.6 percent at December 31, 2001. The median gross profit margin for comparable companies within the industry was 24.0 percent. Thus, although Ale's gross profit margin has declined during the five-year period analyzed, the company has been able to maintain higher margins on its products than that of its industry peers.

Ale's operating profit margin has declined from 4.5 percent at December 31, 1997, to 3.7 percent at December 31, 2001. The median operating profit margin for comparable companies within the industry was 3.7 percent, indicating that the company's competitive advantage may be adversely affected by a less focused management team or by some external forces affecting the company.

Rate of Return Ratios

Since the capital structure of most companies includes both debt capital and equity capital, it is important to measure the return to each of the capital providers.

Return on Equity

$$\frac{\text{Net Income}}{\text{Average Common Stockholder's Equity}}$$

This ratio measures the after-tax return on investment to the equity capital providers of the company.

Return on Investment

$$\frac{\text{Net Income} + \text{Interest}\,(1 - \text{Tax Rate})}{\text{Average (Stockholder's Equity} + \text{Long-term Debt)}}$$

This ratio measures the return to all capital providers of the company. Interest (net of tax) is added back since it also involves a return to debt capital providers.

Return on Total Assets

$$\frac{\text{Net Income} + \text{Interest}\,(1 - \text{Tax Rate})}{\text{Average Total Assets}}$$

This ratio measures the return on the assets employed in the business. In effect, it measures management's performance in the utilization of the company's asset base.

Application to Ale's

Since RMA only reports pretax returns, that is how Ale's ratios were computed for this exhibit only. Ale's rate of return ratios have fluctuated significantly over the five-year period analyzed. Its return on equity and return on total assets have been very inconsistent in spite of fairly steady sales activity. However, Ale's most recent return on total assets of 16.0 percent is above the industry average of 10.3 percent. Ale's recent return on equity of 29.5 percent is dramatically below the industry average of 35.7 percent. This may have to do with Ale's leverage being so much lower than its peer groups, since optimal use of leverage can magnify equity returns. Again, this is cause for further analysis.

Growth Ratios

Growth ratios measure a company's percentage increase or decrease for a particular line item on the financial statements. These ratios can be calculated as a straight annual average or as a compounded annual growth rate (CAGR) measuring growth on a compounded basis over a specific time period. Although it is possible to calculate growth rates on every line item on the financial statements, growth rates typically are calculated on such key financial statement items as sales, gross margin, and operating income, and are calculated through use of the following formulas.

Average Annual Sales Growth

$$\{\text{Sum of all Periods}[(\text{Current Year Sales} / \text{Prior Year Sales}) - 1] / \text{\# of Periods Analyzed}\} \times 100$$

Compound Annual Sales Growth

$$\{[(\text{Current Year Sales} / \text{Base Year Sales})^{(1 / \text{\# of Periods Analyzed})}] - 1\} \times 100$$

Average and compounded annual growth measures for gross margin and operating income are computed in the same manner.

Note: Analysts often spread five years of financial statements. When calculating growth rates on financial statements spread over five years, the analyst should be careful to obtain growth rates over the four growth periods analyzed. In other words, periods = number of years – 1.

Application to Ale's

Ale's sales growth on a compounded basis is slightly above the rate of inflation (3 percent), suggesting that the company's unit volume (on a case-equivalent basis) is relatively flat. The operating profit of Ale's decreased over the period, further evidence of a flattening in operating performance. However, Ale's showed a dramatic increase in operating profit within the past year, possibly indicating a rebound.

CHAPTER 4

Income Approach

Perhaps the most widely recognized approach to valuing an interest in a privately held enterprise is the income approach. As with both the market and asset approaches, several valuation methodologies exist within the income approach to develop an indication of value. This chapter explores the fundamental theory behind the approach and its numerous applications.

Valuation professionals use a number of terms, such as "economic benefits," "economic income," and "net income." These terms are used interchangeably throughout this chapter. However, since most empirical data is based on some variation of cash flow, that term is typically used herein to represent the company's economic benefit stream.

FUNDAMENTAL THEORY

Equity Interests Are Investments

An equity interest in a privately held enterprise is an investment that can be evaluated in the same basic manner as any other investment that the investor might choose to make. An investment is:

> the current commitment of dollars for a period of time to derive future payments that will compensate the investor for
>
> - the time the funds are committed,
> - the expected rate of inflation, and
> - the uncertainty of the future payments.[1]

Investments and Business Valuations Involve the "Forward-Looking" Premise

An investment requires a commitment of dollars that the investor currently holds in exchange for an expectation that the investor will receive some greater amount of dollars at some point in the future. This "forward-looking" premise is basic to all investment decisions and business valuations. "Value today always equals future cash flow discounted at the opportunity cost of capital."[2]

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[1] Frank K. Reilly and Keith C. Brown, *Investment Analysis and Portfolio Management,* 5th ed. (The Dryden Press, Harcourt Brace College Publishers), p. 5.

[2] Richard A. Brealey and Stewart C. Myers, *Principles of Corporate Finance,* 5th ed. (New York: McGraw-Hill, Inc., 1996), p. 434.

The income approach to business valuation embraces this forward-looking premise by calculating value based on the assumption that the value of an ownership interest is equal to the sum of the present values of the expected future benefits of owning that interest. No other valuation approach so directly incorporates this fundamental premise in its calculation of value.

INCOME APPROACH INVOLVES A NUMERATOR

One of the two elements of any income approach method is a *numerator,* representing the future economic benefit accruing to the holder of the equity interest. This future economic benefit can take many forms. It can represent cash flow or net income. Net income may be on a pretax or after-tax basis. It also can represent a single payment or a series or stream of payments. Again, although we continue to use the term "economic benefit," this chapter focuses mainly on cash flow.

INCOME APPROACH INVOLVES A DENOMINATOR

The second element, the *denominator,* is the rate of return required for the particular interest represented by the cash flow in the numerator. The denominator reflects opportunity cost, or the "cost of capital." In other words, it is the rate of return that investors require to draw them to a particular investment rather than an alternative investment.

This rate of return incorporates certain investor expectations relating to the future economic benefit stream:

- The "real" rate of return investors expect to obtain in exchange for letting someone else use their money on a riskless basis;
- Expected inflation is the expected depreciation in purchasing power during the period when the money is tied up;
- Risk is the uncertainty as to when and how much cash flow or other economic income will be received.[3]

The first item is essentially rent. Any investor forgoing current consumption and allowing another party to use his or her funds would require a rental payment. The second item is required due to the time value of money and the decreased purchasing power associated with invested funds being spent later rather than sooner. The third item captures investor expectations about the risks inherent in the specific equity instrument. Generally, this risk assessment is developed through analysis of the future economic benefit and the uncertainty related to the timing and quantity of that benefit. See Chapter 5 for additional detail on rates of return.

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[3] Shannon P. Pratt, *Cost of Capital: Estimation and Application* (New York: John Wiley & Sons, Inc.), p. 5. (Used with permission.)

INCOME APPROACH METHODOLOGIES

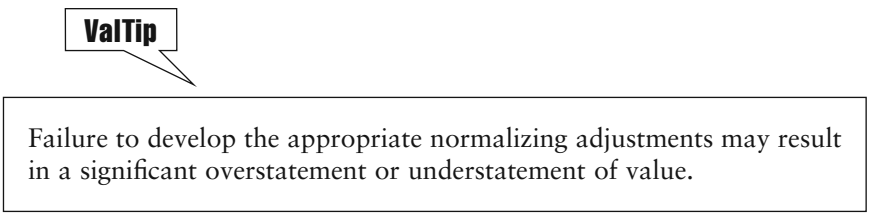
The business valuation profession commonly uses three primary methods within the income approach to value privately held business interests. These include:

1. Discounted cash flow (DCF) method
2. Capitalized cash flow (CCF) method
3. Excess cash flow (ECF) method

Each of these methods depends on the present value of an enterprise's future cash flows, often based on historical financial data. The ECF method is really a hybrid method combining elements of both the asset approach and the income approach. Preferably, the financial data is in compliance with generally accepted accounting principles (GAAP). Valuation analysts, including CPA-analysts, are not responsible for attesting or verifying financial information or certifying GAAP statements when providing valuations. Often they are given non-GAAP financial information as a starting point to derive income or cash flow; this information is often acceptable. However, analysts still should do their best to make appropriate adjustments to income statements and/or balance sheets within the scope of their engagement. The development of these adjustments is referred to as the normalization process.

NORMALIZATION PROCESS

If the value of any investment is equal to the present value of its future benefits, determining the appropriate future benefit stream (cash flow) is of primary importance. Therefore, items that are not representative of the appropriate future cash flow must be either eliminated or adjusted in some manner. The process begins with the collection of historical financial data and includes a detailed review of that data to determine what, if any, adjustments are required.



"Big Five"

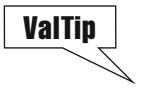
The normalization process involves the restatement of the historical financial statements to "value" financial statements, i.e., statements that can be used in the valuation process. Normalization generally involves five categories of adjustments:

1. For ownership characteristics (control versus minority)
2. For GAAP departures, extraordinary, nonrecurring and/or unusual items
3. For nonoperating assets and liabilities and related income and expenses
4. For taxes
5. For synergies from mergers and acquisitions, if applicable

Generally, the second, third, and fourth categories of normalization adjustments are made in all valuations, whether the ownership interest being valued is a minority or a control interest. The first category of normalization adjustments is not always necessary if the ownership interest being valued is a minority interest. The fifth category is most often used to derive investment value.

ADJUSTMENTS FOR OWNERSHIP CHARACTERISTICS

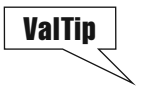
Controlling interest holders are able to extract personal financial benefits beyond fair market amounts in a number of ways. For instance, in a privately held enterprise, it is not unusual for the controlling shareholder to take compensation in excess of going market rates that might be paid for the same services. Since the "willing buyer" of a control ownership interest could reduce compensation to market levels, often it is appropriate to add back excess compensation to cash flow to reflect the additional economic benefits that would be available to the "willing buyer."



By choosing to make certain adjustments to the future economic benefit (i.e., the numerator), the analyst can develop a control or noncontrol value.

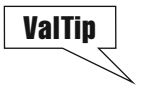
Other examples of control adjustments include:

- Excess fringe benefits including healthcare and retirement
- Excess employee perquisites
- Excess rental payments to shareholders
- Excess intercompany fees and payments to a commonly controlled sister company
- Payroll-related taxes
- Reimbursed expenses
- Nonbusiness travel and entertainment of shareholders and/or key individuals
- Related party transactions (i.e., leases between shareholder and entity)
- Sales/purchases to/from related entities



Normalization adjustments affect the pretax income of the entity being valued. Consequently, the control adjustments will result in a corresponding modification in the income tax of the entity, if applicable.

The content of the numerator drives the type of value (control or minority) produced. As such, if the numerator includes adjustments related to control, the value conclusion will be a control value. By excluding adjustments related to control, the value conclusion is a minority value. If control adjustments are included in the normalization and the resulting value is a control value, a minority interest discount may be used to adjust from control to minority value. There are often situations where no control adjustments are necessary and the company's control owners run the company to the benefit of the all the owners. In this situation, the value would be same for minority and control. However, some analysts still apply a minority discount to reflect the risk of a potential change in the control owner or his or her management philosophy. See Chapter 24 for various views on the subject.



Adjustments to the income and cash flow of a company are the primary determinants of whether the capitalized value is minority or control.

Example

Assume a control shareholder's salary is in excess of market value by $300,000 per year and the capitalized cash flow method is used to value the net cash flow of the company.

NCF = $700,000 (on a noncontrol basis)

Excess Compensation = $300,000 (assume tax-effected)

K_e – g = 20% (discount rate – growth = capitalization rate)

Under these assumptions, the computation of value is:

$$\text{FMV} = \frac{\text{NCF}}{K_e - g} = \frac{\$700{,}000}{20\%} = \$3{,}500{,}000$$

Thus $3.5 million is the value of the entity on a noncontrolling basis.

Assuming that a normalization adjustment would add back the $300,000 of excess compensation to cash flow, the outcome would clearly differ, as illustrated below:

$$\text{FMV} = \frac{\text{NCF}}{K_e - g} = \frac{\$1{,}000{,}000}{20\%} = \$5{,}000{,}000$$

Here, $5 million is the value of the entity on a control basis. The difference in the two conclusions is entirely attributable to those portions of a control benefit stream taken out of the company as excess compensation.

If the analyst chooses to make the control normalization adjustment, a minority interest value still could be determined by utilizing a discount for lack of control.

	Noncontrol	Control
NCF	$ 700,000	$1,000,000
$K_e - g$	20%	20%
FMV	3,500,000	5,000,000
Minority/discount at 30%*	0	(1,500,000)
	$3,500,000	$3,500,000

*Discounts are discussed in Chapter 8.

ValTip

When there are controlling interest influences in the benefit stream or operations of the entity and a minority interest is being valued, it may be preferable to provide a minority value directly by not making adjustments. Doing this will avoid the problems related to determining and defending the application of a more general level of minority discount.

The debate as to whether to make these control adjustments in a minority valuation is ongoing. Some analysts prefer to make the adjustments, then apply a minority discount. They argue that by *not* making these adjustments, one could:

- Understate value
- Overstate the minority discount
- Possibly "double count" the minority discount

Those who believe one should not make control adjustments, that is, leave the cash flows on a minority basis, say that:

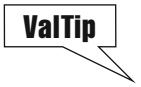
- Minority interests have no say in compensation and perquisites to controlling shareholders and cash flows must reflect this fact.
- The amount of these adjustments may be difficult to justify or verify.
- Almost all of the difference in control versus minority value in the income approach is found in the numerator—the expected income—rather than in the denominator—the discount or capitalization rate.

ADJUSTMENTS FOR GAAP DEPARTURES, EXTRAORDINARY, NONRECURRING, AND/OR UNUSUAL ITEMS

In analyzing historical financial statements, it is important to "smooth" the financial data by removing all items that would not be indicative of future operating performance. The goal is to present a normal operating picture to project earnings into

the future. Because conclusions of value are based on future return expectations, and because most analysts use historical financial information as the starting point for estimating future returns, it would be appropriate to consider the following adjustments.

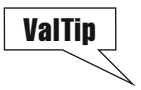
- Departures from GAAP
- Extraordinary items
- Nonrecurring items
- Unusual items



Depending on the situation, statements prepared on a "tax basis" or "cash basis" may have to be adjusted to be closer to GAAP and/or normalized cash flow.

One-time advertising expenditures or unusually high equipment repairs in a single year are just two simple examples of the types of items that might be considered nonrecurring or not part of a normal operating cycle. Other examples include the effects of catastrophic events such as a plant fire, hurricane damage, labor strikes, and/or insurance proceed collections due to such events as the death of a key executive.

Other adjustment items also can be found in historical balance sheet and cash flow accounts. For example, if a company purchased a level of fixed assets far beyond its historical norm and funded the purchases from cash flow from operations, it may be necessary to "smooth" the depreciation and corresponding cash flow to reflect a more normal pattern.



As with the control-oriented adjustments, extraordinary, nonrecurring, or unusual item adjustments affect the profit or loss accounts of a company on a pretax basis. Therefore, certain income tax-related adjustments may be necessary.

See Chapter 3 for greater detail and examples on financial statement adjustments.

ADJUSTMENTS FOR NONOPERATING ASSETS AND LIABILITIES AND RELATED INCOME AND EXPENSES

The application of most commonly accepted income approach methodologies results in a valuation of the company's operating assets, both tangible and intangible. Therefore, it is often necessary to remove all nonoperating items from the com-

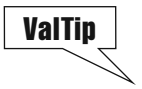
pany's balance sheet and income statement. After the value of the operating assets has been determined, the net nonoperating assets generally are added back at their respective values as of the valuation date.

Examples of nonoperating assets and liabilities might include airplanes, unsold plant facilities that have been replaced, significant investments in unrelated companies, equity investments, excess cash or working capital, and loans to support any of these.

The interest, dividends, and rental income, as well as any related expenses (loan interest, depreciation, and other carrying costs) associated with these nonoperating assets must be removed from the operating benefit stream. Once again, these types of adjustments will alter the pretax operating income.

Methodologies for the valuation of nonoperating assets and liabilities will vary depending on the nature of the asset or liability. Usually more significant fixed assets, such as an airplane or building, are separately appraised. Investments in privately held enterprises may require a separate entity valuation. In many cases, the nonoperating assets will have appreciated since acquisition and may require a consideration of the potential tax implications of any gain associated with this appreciation. If nonoperating assets exist and are to be added to the operating assets, they must be adjusted to their respective fair market values, including an adjustment for discounts if applicable.

When valuing a minority interest, some experts do not add back nonoperating assets since minority shareholders have little or no control over the assets. However, this often results in a very large implied discount on the nonoperating assets, particularly those with low income or high expenses.



Specialists in the valuation of particular nonoperating assets may need to be hired. Engagement letters should clearly set out these responsibilities and the related appraisal expenses.

ADJUSTMENTS FOR TAXES

The question of whether to tax-effect or not tax-effect income in pass-through entities is a highly debated issue in business valuation (see Chapters 3 and 23). However, the selection of tax rates can also be an issue.

Income tax expenditures represent a very real use of cash flow and must be considered carefully. If both federal and state taxes are to be reflected, they should be based on the future income that was determined in the valuation process, including the appropriate tax rate(s) to use.

Tax Rate or Rates to Use

Determining the tax on future income can incorporate the:

- Actual tax rate

- Highest marginal tax rate
- Average tax rate

For example, on $1 million of pretax cash flows, the resulting capitalized value would vary depending on the tax rates, as shown in Exhibit 4.1.

Exhibit 4.1 Taxes and Value

	Actual Tax Liability	Average Tax Rate of 35%	Highest Marginal Rate of 39%
Before tax income	$1,000,000	$1,000,000	$1,000,000
Tax on the taxable income	222,500	350,000	390,000
After tax cash flows	777,500	650,000	610,000
Capitalized value 20%	$3,887,500	$3,250,000	$3,050,000

The lowest value, which uses the highest marginal rate, is more than 21 percent below the highest value, which uses the actual tax liability. This is a significant difference. Taxes can vary from year to year for a variety of reasons. As such, undue reliance on one year may lead to a faulty valuation.

The tax issue becomes even more controversial when the entities involved are pass-through entities such as S corporations and partnerships. Since these entities have little or no federal and state tax liability, applying after-tax discount and cap rates to pretax income would result in a higher value for the pass-through entity, all other things being equal (see Exhibit 4.2). See Chapters 3 and 23 for more detail on this important and complicated issue.

Exhibit 4.2 Applying After-tax Cap Rate to Pre-tax Cash Flow

	Pass-Through Entity	"C" Corporation
Before tax cash flow	$1,000,000	$1,000,000
Tax on the taxable income	0	350,000
After tax cash flows	$1,000,000	650,000
Capitalized value 20%	$5,000,000	$3,250,000

ADJUSTMENTS FOR SYNERGIES FROM MERGERS AND ACQUISITIONS

Synergistic adjustments may be needed in mergers and acquisitions engagements. These adjustments will vary in complexity. For example, synergy adjustments could be as simple as adjusting for savings in "office rent" due to the consolidation of office facilities. Synergy adjustments also can include the results of in-depth analyses of increased sales, decreased production costs, decreased sales and marketing costs, and other improvements due to anticipated economies of scale.

ValTip

Synergistic value is investment value, which may not be fair market value.

DETERMINATION OF FUTURE BENEFITS STREAM (CASH FLOWS)

Under the capitalized cash flow method, a single measure of the "expected" annual future economic benefit is used as a proxy for all future benefits. Under a discounted cash flow methodology, discrete "expected" future economic benefits are projected for a specified number of years in the future and then a single measure of economic benefit is selected for use into perpetuity after the specified period, which is referred to as the terminal value.

Both the cap rate and the discount rate are intended to encompass investor expectations regarding the risk of receiving the future economic benefits in the amounts and at the times assumed in the models. Given the forward-looking nature of these methodologies, the valuation analyst will want to properly assess potential future economic benefits to produce a valuation conclusion that is accurate and supportable.

DEFINING THE BENEFIT STREAM

Both single-period benefit streams (CCF) and multiperiod benefit streams (DCF) can be defined in a variety of ways, depending on what definition is most appropriate in a given circumstance. The most common definitions of future economic benefits are net income and net cash flow.

Net Income

Net income is the measure of an entity's operating performance and typically is defined as revenue from operations less direct and indirect operating expenses. Its usefulness as a measure of economic benefit for valuation purposes lies in its familiarity through financial statements. It can be either before or after tax. The problem with using net income as the economic benefit is that it is more difficult to develop discount and cap rates relative to net income; cash flow rates of return are more readily available using traditional cost of capital techniques.

ValTip

In many small companies, income and cash flow are the same or similar.

Net Cash Flow

In recent years, net cash flow has become the most often-used measure of future economic benefit, because it generally represents the cash that can be distributed to equity owners without threatening or interfering with future operations.

Net cash flow is akin to dividend-paying capacity and as such can be seen as a direct proxy for return on investment. Finally, it is the measure on which most commonly accepted empirical data on rates of return are based.

DEFINING NET CASH FLOW

Net cash flow is defined differently depending on the method of the income approach selected. Whether using a DCF or a CCF, the analyst can elect to rely on the direct equity method or the invested capital method. The next sections present the components of net cash flow.

Cash Flow Direct to Equity (Direct Equity Method)

Net income after tax
Plus: depreciation, amortization and other non-cash changes
Less: incremental working capital needs
Less: incremental capital expenditure needs
Plus: new debt principal in
Less: repayment of debt principal
Equals: net cash flow direct to equity

The cash flows here are "direct to equity" because debt has been serviced by the inclusion of interest expense and debt repayment, and what is left is available to equity owners only. This is a debt-inclusive model.

Cash Flow to Invested Capital (Invested Capital Method)

Net income after tax
Plus: interest expense (tax affected)
Plus: depreciation, amortization and other noncash changes
Less: incremental "debt-free" working capital needs
Less: incremental capital expenditure needs
Equals: net cash flow to invested capital

The cash flows here are those available to service invested capital, i.e., equity and interest-bearing debt. The cash flows exclude interest expense and debt principle payment. It is a debt-free model in the sense that all interest and related debt capital is removed. The value determined by this method is invested capital which is typically interest-bearing debt, capital leases and equity. To derive equity value using this method the analyst subtracts the actual debt of the subject company.

USE OF HISTORICAL INFORMATION

Once the benefit stream has been defined and adjustments have been made, the analyst will want to analyze historical financial information since it often serves as the foundation from which estimates of future projected benefits are made.

The historical period under analysis usually encompasses an operating cycle of the entity's industry, often a five-year period. Beyond five years, data can become "stale." There are five commonly used methodologies by which to estimate future economic benefits from historical data:

1. The current earnings method
2. The simple average method
3. The weighted average method
4. The trend line-static method
5. The formal projection method

The first four methods are most often used in the CCF method of the income approach or as the starting point for the DCF method. The fifth method is the basis for the DCF method. The CCF and DCF methods are explained in greater detail later in this chapter. All of these methods can be used in either the direct equity or the invested capital method of the income approach.

Current Earnings Method

The current year's income is sometimes the best proxy for the following year and future years in many closely held companies. Management insights will be helpful in deciding whether current cash flows are likely to be replicated in the ensuing

ValTip

Regardless of the method employed, dialogue with management can provide critical insight into future projections.

years. If management indicates that next year will be very similar to last year, then current earnings and cash flow may be used as the basis to value the company. It is also possible that next year's cash flow will be different from the past but still grow into perpetuity at an average constant rate. Any such projection must be supported with sound underlying assumptions.

Simple Average Method

The simple average method uses the arithmetic mean of the historical data during the analysis period. The simple average method can be illustrated by the following example:

ACE Corporation—Historical Cash Flow*	
1997	$100,000
1998	90,000
1999	160,000
2000	170,000
2001	180,000
	$700,000
	÷ 5 = 140,000 (Simple Average)

*After normalization adjustments

A simple average is used most often in developing the numerator for the capitalization of cash flow method when historical normalized information does not discern an identifiable trend. If the historical analysis period encompasses a full industry operating cycle, the use of a simple average also may provide a realistic estimate of expected future performance. However, it may not accurately reflect changes in company growth or other trends that are expected to continue.

In this example, the simple averaging method may not work well in estimating future cash flows. The last three years' results may be more indicative of the company's value when the company has been growing consistently and 1997 was perhaps an anomaly. A cursory glance would tell you that the next year's cash flow probably would be expected to be somewhat higher than $180,000, providing that the historical data are representative of the business's direction and mirror management's expectations.

Weighted Average Method

When the historical financial information yields a discernible trend, a weighted average method may yield a better indication of the future economic benefit stream, since weighting provides greater flexibility in interpreting trends. In fact, under certain circumstances, specific years may be eliminated altogether, that is, have zero weight.

The computation of the weighted average requires the summation of a set of results that are the products of assigned weights times annual historical economic benefit streams. It can be illustrated by the following example:

ACE Corporation Normalized historical Cash Flow	
1997	$100,000
1998	90,000
1999	160,000
2000	170,000
2001	180,000
	$700,000

Application of Weights		
100,000 × 1	=	$ 100,000
90,000 × 2	=	180,000

160,000 ×	3	=	480,000
170,000 ×	4	=	680,000
180,000 ×	5	=	900,000
	15		$2,340,000
Weighted Average $2,340,000 ÷15 =			$ 156,000

In this example, the analyst has identified a trend, which requires greater weight be applied to the most recent operating periods.

In deciding upon a weighting scheme, the analyst should attempt to model future expected economic benefits accurately. Any weights can apply to any of the years. For example:

Application of Weights			
100,000 ×	0	=	$ 0
90,000 ×	0	=	0
160,000 ×	1	=	160,000
170,000 ×	2	=	340,000
180,000 ×	3	=	540,000
	6		$1,040,000
Weighted Average $1,040,000 ÷ 6 =			$ 173,333

In this specific example, the weighted average method still may not reflect anticipated cash flow correctly. As with the simple average method, the resulting value in this example tends to be conservative and may understate value when future performance is expected to exceed the prior year. Care must be exercised in using weighted averages.

Trend Line-Static Method

The trend line-static method is a statistical application of the least squares formula. The method generally is considered most useful when the company's past earnings have been relatively consistent (either positive or negative) and are expected to continue at similar levels in the future. At least five years of data is suggested.

$$y = a + bx$$

Where:

y = predicted value of y variable for selected x variable

a = y intercept (estimated value of y when x = 0)

b = slope of line (average change in y for each amount of change in x)

x = independent variable

$$a = \frac{\Sigma Y}{N} - \frac{b\Sigma X}{N} \text{ or } \overline{Y} - \overline{bX}$$

Where:

X = value of independent variable

Y = value of dependent variable

N = number of items in sample

$\overline{X}$ = mean of independent variable

$\overline{Y}$ = mean of dependent variable

$$b = \frac{N(\Sigma XY) - (\Sigma X)(\Sigma Y)}{N(\Sigma X^2) - (\Sigma X)^2}$$

The computation can be illustrated as follows:

ACE Corporation—Historical Cash Flow

X	Y	XY	X^2
1	$100,000	$ 100,000	1
2	90,000	180,000	4
3	160,000	480,000	9
4	170,000	680,000	16
5	180,000	900,000	25
15	$700,000	$2,340,000	55

The next step requires solving the equations for variables a and b. Because variable b is integrated into the formula for variable a, the value of b must first be determined.

$$b = \frac{[5\ (\$2{,}340{,}000)] - [15\ (\$700{,}000)]}{5\ (55) - (15)^2}$$

$$b = \frac{\$11{,}700{,}000 - \$10{,}500{,}000}{275 - 225}$$

$$b = \frac{\$1{,}200{,}000}{50}$$

$$b = \$24{,}000$$

Solving further for variable *a*,

$$a = \frac{\$700{,}000 - [\$24{,}000\ (15)]}{5}$$

$$a = \frac{\$340{,}000}{5}$$

$$a = \$68{,}000$$

Finally, solving the original least square formula,

$$y = a + bx$$

$$y = \$68{,}000 + (\$24{,}000 \times 5)$$

$$y = \$188{,}000$$

As can be seen, the trend line static method places the greatest weight on the most recent periods, even more so than the weighted average method. Depending on the facts, this may produce a more accurate picture of future cash flows, particularly when growth is expected to continue. There are various statistical measures that can also be used to test the reliability of the results derived from this method.

Formal Projection Method (Detailed Cash Flow Projections)

The formal projection method uses projections of cash flows or other economic benefits for a specified number of future years (generally five) referred to as the "explicit," "discreet," or "forecast" period. This method is used to determine future economic benefit streams when using the DCF method. This method has been widely accepted due to the flexibility it allows when estimating year-by-year benefit streams over the explicit period.

ValTip

Theoretically, the length of the explicit period is determined by identifying the year when all the following years will change at a constant rate. Practically, however, performance and financial position after three to five years often are difficult to estimate for many closely held companies.

With exceptions, three to five years is the standard length of the explicit period. One such exception is for start-up and early-stage companies whose profitability often is not projected until several additional years out. The period following the explicit period is called the "continuing value" or "terminal" period.

Projections often are determined by reference to historical financial information that has been normalized. Used as a foundation for future expectations, normalized financial statements may include both balance sheet and income statement adjustments.

Once the analyst has normalized the historical data, when applicable, it may be necessary to review all elements of revenue and expenses to ensure that future operating projections reflect as closely as possible the trends identified in the analysis of historical financial information. These trends should be discussed with management and related to future expectations and economic and industry research undertaken by the business analyst in conjunction with the engagement.

ValTip

In some circumstances, the past is not indicative of the future. Analysts must exercise care in analyzing projected performance in these situations. Adequate support must exist for the assumptions that the projections are based on.

If the value measure selected is net cash flow, it is necessary to establish projections of working capital needs, capital expenditures, depreciation, and, if using a direct equity method, borrowings, and repayments of debt. Each of these items may restrict or provide free cash flow, affecting the return on equity.

A question sometimes arises as to why analysts may need future balance sheets and statements of cash flow when they are using a DCF model. The interactive nature of the balance sheet, income statement, and statement of cash flows operate to ensure that all aspects of future cash flow have been addressed and that assumptions utilized in the projection of the income statement work properly through the balance sheet. This is not always necessary.

ValTip

The valuation analyst uses normalized historical data, management insights, and trend analysis to analyze formal projections for the explicit period. These projections take into account balance sheet and income statement items that affect the defined benefit stream and involve not only projected income statements but also may include projected balance sheets and statements of cash flow.

DISCOUNTED CASH FLOW METHOD

Definition and Overview

The discounted cash flow method is discussed first because other income methods are abbreviated forms or variations of this method. Therefore, understanding the theory and application of the discounted cash flow method will make it much easier to understand the other methodologies. The most important consideration is that:

The value of any operating asset/investment is equal to the present value of its expected future economic benefit stream.

ValTip

All other things being equal, the more certain the future streams of cash flow are, the more valuable the asset or entity is.

The reliability of actually receiving future economic benefit streams is different from asset to asset and from entity to entity. Asset or entity risk is assessed and measured in the form of a rate referred to as a "discount rate," a "rate or return," or the "cost of capital." These terms are used interchangeably throughout this book and are covered in detail in Chapter 5.

DCF Model

The basic DCF model is as follows[4]:

$$PV = \sum_{i=1}^{n} \frac{E_i}{(1+k)^i}$$

Where:

PV = Present value

Σ = Sum of

n = The last period for which economic income is expected; n may equal infinity (i.e., ∞) if the economic income is expected to continue in perpetuity

E_i = Expected future economic income in the ith period in the future (paid at the end of the period)

k = Discount rate (the cost of capital, e.g., the expected rate of return available in the market for other investments of comparable risk and other investment characteristics)

i = The period (usually stated as a number of years) in the future over which the prospective economic income is expected to be received

The expansion of this formula is[5]:

$$PV = \frac{E_1}{(1+k)^1} + \frac{E_2}{(1+k)^2} + \ldots + \frac{E_n}{(1+k)^n}$$

Where:

PV = Present value

[4] Shannon P. Pratt, Robert F. Reilly, and Robert P. Schweihs, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies*, 4th ed. (New York: McGraw-Hill, Inc., 2000), p. 155.

[5] *Ibid.*, p. 155.

E_n = Expected future economic income in the *n*th or last period in which an element of income is expected. $E_{1,2,\text{ etc.}}$ is the first, second, third, and so on expected future economic income for each period before the *n*th period (or year).

k = Discount rate

The basic formula for the DCF using net cash flow (direct equity or invested capital) and a terminal period is shown in Exhibit 4.3.

Exhibit 4.3 Basic DCF Formula

$$\underbrace{\frac{NCF_1}{(1+k)^1} + \frac{NCF_2}{(1+k)^2} + \ldots + \frac{NCF_n}{(1+k)^n}}_{\text{Present Value of NCF's during } \textbf{Explicit Period}} + \underbrace{\frac{\dfrac{NCF_n \times (1+g)}{(k-g)}}{(1+k)^n}}_{\text{Present Value of the } \textbf{Terminal Period}}$$

Where:

NCF = E, expected future economic income, but now more specifically net cash flow

The following type of chart (Exhibit 4.4) often will be used to project bottom-line net cash flow. For example, assume current year cash flow is $10,000 with anticipated growth and discount rate as follows:

Exhibit 4.4 Cash Flow and Growth

Current Year Earnings	Discounted Rate to Equity	Year	Growth Rates
$10,000	26%		
		1	33%
		2	23%
		3	16%
		4	12%
		5	8%
	Long-Term Sustainable Growth Rate	Perpetuity	6%

This can be modeled and presented as in Exhibit 4.5.

End-of-Year and Midyear Conventions

Some DCF models calculate the present value of the future cash flows as if all periodic cash flows will be received on the last day of each forecast period (see Exhibit 4.6). This is obviously not the case with most companies.

Exhibit 4.5 DCF with Terminal Year

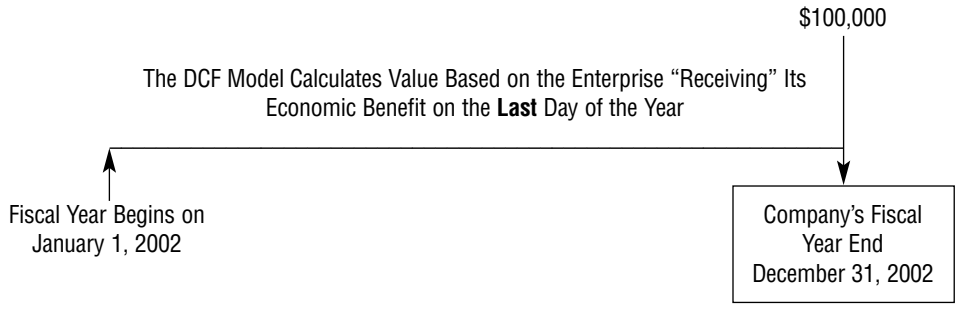
END of	Further Reduces To		Further Reduces To		Further Reduces To		Final
Period 1	$\frac{NCF_1}{(1+k)^1}$	=	$\frac{\$10{,}000 \times (1+33\%)}{(1+.26)^1}$	=	$\frac{\$13{,}300}{1.26}$	=	$10,556
	+		+		+		+
Period 2	$\frac{NCF_2}{(1+k)^2}$	=	$\frac{\$13{,}300 \times (1+23\%)}{(1+.26)^2}$	=	$\frac{\$16{,}359}{1.5876}$	=	$10,304
	+		+		+		+
Period 3	$\frac{NCF_3}{(1+k)^3}$	=	$\frac{\$16{,}359 \times (1+16\%)}{(1+.26)^3}$	=	$\frac{\$18{,}976}{2.0004}$	=	$ 9,486
	+		+		+		+
Period 4	$\frac{NCF_4}{(1+k)^4}$	=	$\frac{\$18{,}976 \times (1+12\%)}{(1+.26)^4}$	=	$\frac{\$21{,}254}{2.5205}$	=	$ 8,432
	+		+		+		+
Period 5	$\frac{NCF_5}{(1+k)^5}$	=	$\frac{\$21{,}254 \times (1+8\%)}{(1+.26)^5}$	=	$\frac{\$22{,}954}{3.1758}$	=	$ 7,228
	+		+		+		+
	$\frac{\text{Terminal Value}}{\frac{NCF_5 \times (1+g)}{(k-g)}}{(1+k)^5}$	=	$\frac{\text{Terminal Value}}{\frac{\$22{,}954 \times (1+6\%)}{(.26-.06)}}{(1+.26)^5}$	=	$\frac{\text{Terminal Value}}{\frac{\$24{,}331}{0.20}}{3.1758}$	=	$38,307
	The Sum of the Present Values of Expected Future Cash Flows Using the Gordon Growth Model to Calculate the Terminal Value						$84,313

Although some models are based on continuous cash flows through the year, a shortcut method has been developed called the midyear convention. The midyear convention DCF model treats periodic cash flows as if they will be received in the middle of the year. This is accomplished by starting the first forecast period (n) at midperiod (.5n). Each successive forecast period is calculated from midperiod to midperiod (.5n + 1).

Comparative Example

Assume that a company receives cash flow equal to $100 per month or $1,200 per year (see Exhibit 4.7). Using a 6 percent interest factor, we could compute the present value of the first $100 received by dividing it by $(1 + .06/12)^1$, dividing the second $100 by $(1 + .06/12)^2$, and so on for 12 months, with the total present value equaling $1,161.88.

Exhibit 4.6 End of Year Convention



Assuming the same total received during the year is $1,200, and dividing by $(1 + .06)^{1/2}$ (a midyear convention), the present value equals $1,165.54, a difference of only $3.66.

If it appears that the subject entity is receiving cash flows on a fairly even basis, then the midyear convention is a reasonable approximation.

For further illustration, assume the $1,200 was cash flow received at the end of the year. The present value would be equal to $1,132.08, a difference of $29.80 from the value derived by recognizing $100 per month. As such, the midyear convention more closely resembles how a typical company receives its cash flow. This obviously excludes seasonal businesses. Distribution policies and timing also can affect the selection of the timing convention.

Exhibit 4.7 Midyear Convention Model Compared to a Monthly Model

$$\mathbf{PV} = \frac{\$1{,}200}{(1 + .06)^{1/2}} = \frac{\$1{,}200}{1.029563} = \$1{,}165.54$$

Month	Amount	6.00% Discount Factor Half-Year	Monthly	Present Value
1	100		1.005	99.50
2	100		1.010	99.01
3	100		1.015	98.51
4	100		1.020	98.02
5	100		1.025	97.54
6	100	1.029563	1.030	97.05
7	100		1.036	96.57
8	100		1.041	96.09
9	100		1.046	95.61
10	100		1.051	95.13
11	100		1.056	94.66
12	100		1.062	94.19
	1,200			1,161.88
	1,200		1.029563	1,165.54

The midyear convention DCF model (5 years) now looks like Exhibit 4.8, where n = 1 year.

It is important to note that the terminal year begins at 4.5, *not* 5.

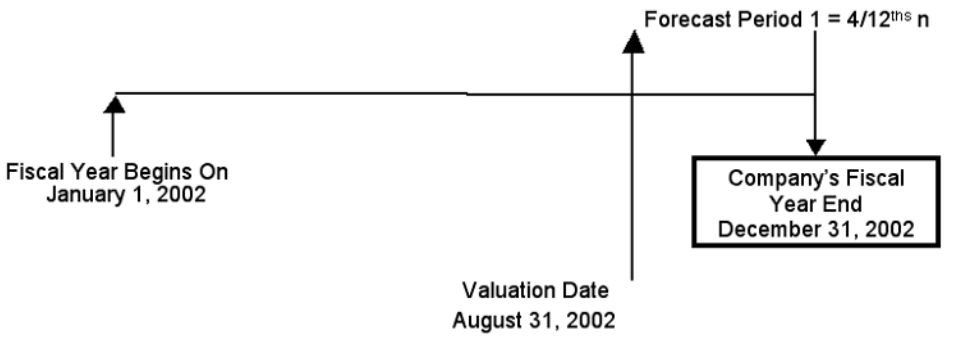
Exhibit 4.8 Midyear Convention DCF Model

$$PV = \underbrace{\frac{NCF_1}{(1+k)^{n=.5}} + \frac{NCF_2}{(1+k)^{n=1.5}} + \cdots + \frac{NCF_n}{(1+k)^{n=4.5}}}_{\text{Present Value of NCF's during Explicit Period}} + \underbrace{\frac{NCF_n \times (1+g)}{(k-g)(1+k)^{n=4.5}}}_{\text{Terminal Value}}$$

Adjusting the DCF for a Specific Valuation Date

Since the date of valuation is often *not* the entity's fiscal year end, adjustments to the present value calculations may be needed to reflect the "other than year-end" date.

Exhibit 4.9 Illustration of Specific Valuation Date



Assumptions:

NCF = $100,000
n = 1

Cash flows have been distributed equally over fiscal year 2002.

g = 7%
k_e = 20%

In the scenario shown in Exhibit 4.9, the valuation date is August 31, 2002, with projections for the first projection year ending in four months, at December 31, 2002. Assuming equal distribution of earnings over the months, then 8/12ths has already been taken into consideration with the August 31, 2002, period. Assuming that the DCF model is the proper valuation tool to use, the present value of the first-year projection deals *only* with 4/12ths of $100,000, or $33,333. If the second-year projection showed cash flows of $107,000, or a 7 percent increase, then at August 31, 2002, the discount period of the $107,000 is 4/12ths *plus* one year.

For example, let us assume that you are calculating the present value of the $100,000 and the $107,000 referenced above. Exhibit 4.10 presents the schematic view for year 2002. Exhibit 4.11 presents another view.

Exhibit 4.10 Schematic View for Year 2002

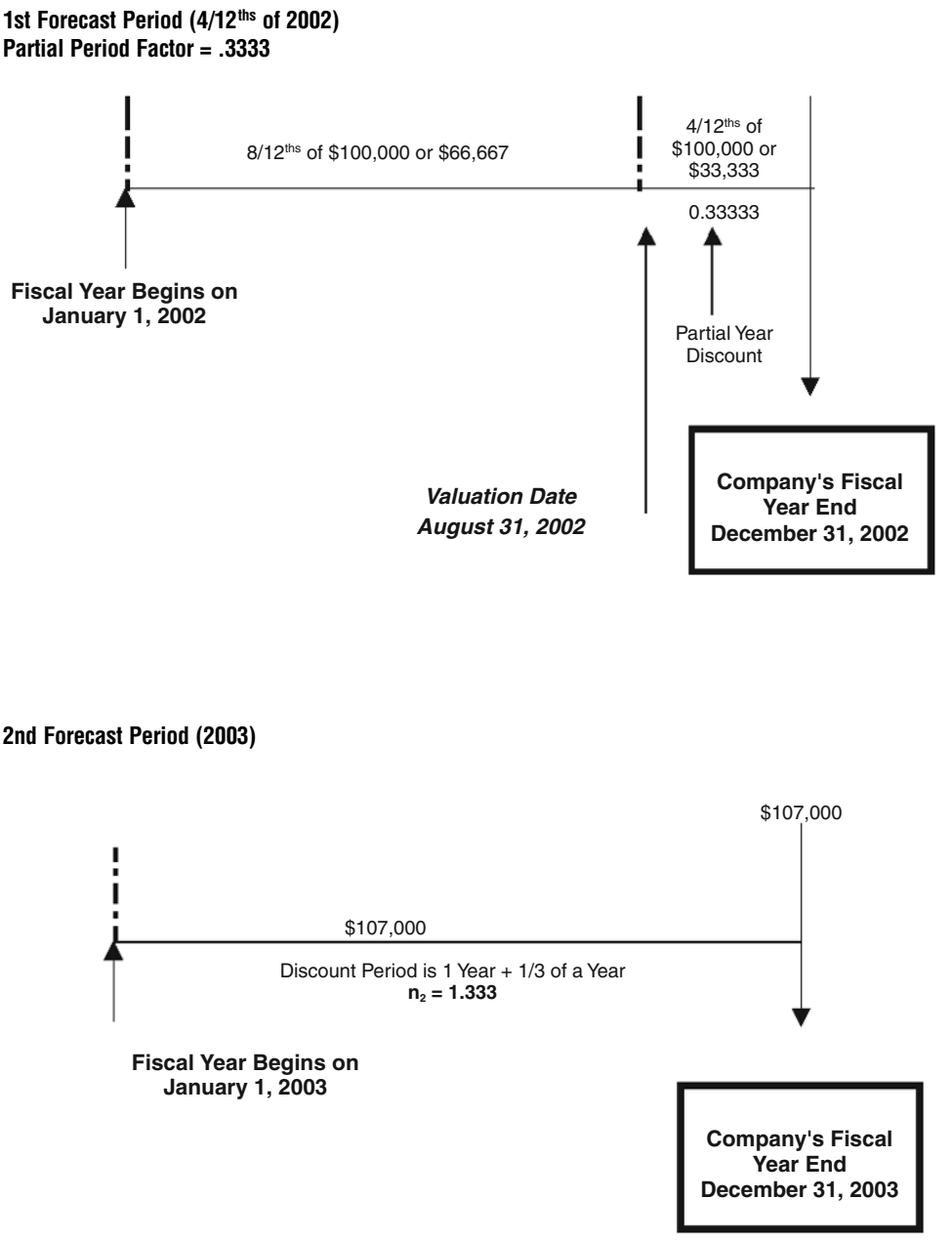


Exhibit 4.11 Another View

		Fiscal Year Ending December 31st 2002	2003
NCF		100,000	107,000
Times: Partial Period Factor		0.3333	N/A
Times: Present Value Factor	$k_e = 20\%$	0.9410	0.7842
		↑	↑
		$ 31,364	$ 83,909
		+ 83,909	
Total Present Value at August 31, 2002		$115,273	

Multistage Explicit Periods

It is possible to have more than one explicit period in a DCF calculation. For example, a start-up might be expected to experience four years of substantial growth, followed by five years of high growth and another four years of growth at rates still in excess of the norm (see Exhibit 4.12). Although not universally accepted, some analysts also apply different discount rates to the different explicit growth periods to reflect different levels of risk. Most valuations do not include different discount rates.

The formula for multistage models is shown in Exhibit 4.13.

Exhibit 4.12 Multistage Explicit Periods

Time Periods	Year	Cash Flow To Equity	Average Growth Rates	Equity Discount Rate	End of Year PV Factor	Present Value of Cash Flows
	1	$ 10,000	N/A	26%	0.794	$ 7,940
1st Explicit	2	16,000	60%	26%	0.630	10,080
Period	3	22,400	40%	26%	0.500	11,200
	4	29,120	30%	26%	0.397	11,560
	5	34,944	20%	26%	0.315	11,010
2nd Explicit	6	41,933	20%	26%	0.250	10,480
Period	7	50,319	20%	26%	0.198	9,960
	8	60,383	20%	26%	0.157	9,480
	9	72,460	20%	26%	0.125	9,060
	10	81,155	12%	26%	0.099	8,030
3rd Explicit	11	90,894	12%	26%	0.079	7,180
Period	12	101,801	12%	26%	0.063	6,410
	13	114,017	12%	26%	0.050	5,700
Terminal Value		120,858	6%	26%	0.050	30,210
Total Value of Common "Equity"						$148,300

Exhibit 4.13 Formula for Mulitistage Models

$$PV = \sum_{i=1}^{n_1} \frac{NCF_0 (1 + g_1)^i}{(1 + k)^i} + \sum_{i=n_1+1}^{n_2} \frac{NCF_{n1} (1 + g_2)^i}{(1 + k)^i} + \frac{\dfrac{NCF_{n2} (1 + g_3)}{(k - g_3)}}{(1 + k)^{n2}}$$

Where:

k	=	the cost of capital
PV	=	present value
i	=	a measure of time (in this example the unit of measure is a year)
n_1	=	the number of years in the first stage of growth
n_2	=	the number of years in the second stage of growth
NCF_0	=	cash flow in year 0
NCF_{n1}	=	cash flow in year n_1
NCF_{n2}	=	cash flow in year n_2
g_1	=	growth rate from year 1 to year n_1
g_2	=	growth rate from year (n_1 + 1) to year n_2
g_3	=	growth rate starting in year (n_2 + 1)

TERMINAL VALUE[6]

Definition and Overview

The final component of value in the DCF is the terminal value, sometimes referred to as the continuing value. The terminal value is the value of the business after the explicit or forecast period.

ValTip

The terminal value is critically important as it often represents a substantial portion of the total value of an entity.

[6] "Terminal value" is generally synonymous with residual value, reversionary value, continuing value, and future value.

The example in Exhibit 4.14 shows that the present value of the terminal value could actually be greater than the sum of the interim cash flows (explicit period) as well as the total value of the common equity.

Exhibit 4.14 DCF Value (Invested Capital Method)

Year	Cash Flow to Invested Capital	Discount Rates to Invested Capital	PV Factor	Present Value of Cash Flows
1	$ 10,000	16%	.862	$ 8,621
2	10,600	16%	.743	7,878
3	11,236	16%	.641	7,198
4	11,910	16%	.552	6,578
5	12,625	16%	.476	6,011
Terminal Value	133,823		.476	63,715
	Total Value of "Invested" Capital			100,000
	Less: Fair Market Value of Interest-bearing Debt			(40,000)
	Fair Market Value of Equity			$60,000
	Growth Rate = 6%			

Calculation of the Terminal Value

In a DCF, the terminal value is the value of the company at the beginning of year n + 1. This value often is calculated by using the Gordon Growth Model, which is the same math that is used in the capitalization of cash flow method (to be discussed later). It is as shown in Exhibit 4.15.

Exhibit 4.15 Gordon Growth Model for Terminal Year

$$\underbrace{\frac{NCF_1}{(1+k)^1} + \frac{NCF_2}{(1+k)^2} + \ldots + \frac{NCF_n}{(1+k)^n}}_{\text{Present Value of NCFs during } \textbf{Explicit Period}} + \underbrace{\frac{NCF_n \times (1+g)}{(k-g)}}_{\text{Gordon Growth Terminal Value}}$$

Where:

NCF	=	Net cash flow commensurate with k, the required rate of return
k	=	Required rate of return or discount rate commensurate with the net cash flow
g	=	Long-term sustainable growth rate
n	=	number of periods in the explicit forecast period

Because making accurate forecasts of expected cash flows after the explicit period is difficult, the analyst usually assumes that cash flows (or proxies for cash flows) stabilize and can be capitalized into perpetuity. This is an average of future growth rates, not one expected to occur every year into perpetuity. Some years

growth will be higher or lower, but the expectation is that future growth will average the long-term growth assumption.

Other Terminal Value Calculations

The Gordon Growth Model is easy to use, considered theoretically sound, and universally applied. However, other terminal year models sometimes are used. We will look briefly at the exit multiple model, the "H" model, and the value driver model.

Exit Multiple Model

One alternative method for determining the amount of the terminal value is to use a multiplier of an income parameter such as net income, earnings before interest and taxes (EBIT), earnings before interest, taxes, depreciation and amortization (EBITDA), etc. This multiple, which is often used by investment bankers, is generally determined from guideline company market data and is referred to as an "exit multiple." It is applied to one of the income parameters at the end of the explicit period. Because it is sometimes difficult to support the use of a market approach within an income approach, this method is not used as much as the Gordon Growth Model. However, it can be used effectively as a reasonableness check on other models.

"H" Model[7]

The "H" Model assumes that growth during the terminal period starts at a higher rate and declines in a linear manner over a specified transition period toward a stable-growth rate that can be used into perpetuity. The "H" Model calculates a terminal value in two stages. The first stage quantifies value attributable to extraordinary growth of the company during the forecast period. The second stage assumes stable growth and uses a traditional Gordon Growth formula (see Exhibit 4.16).

Exhibit 4.16 H Model

$$\text{Stable Growth Value} = \frac{CF_{(0)} \times (1 + g_S)}{k - g_S}$$

Plus

$$\text{Extraordinary Growth Value} = \frac{CF_{(0)} \times h \times (g_i - g_S)}{k - g_S}$$

Where:

Cf_0	=	Cash Flow (Initial Cash Flow)
k	=	Discount Rate
h	=	Midpoint of high growth (transition period/2)
g_i	=	Growth rate in the "initial high growth period"
g_S	=	Growth rate in the "stable period"

[7] For further information on the H Model see Aswath Damodaran, *Damodaran on Valuation: Security Analysis for Investment and Corporate Finance* (New York: John Wiley & Sons, Inc., 1994), p. 387.

Value Driver Model[8]

The value of continuing cash flows also can be calculated using the value driver model. In the Gordon Growth Model, the analyst must estimate continuing incremental investment (capital expenditures and working capital) in order to determine the continuing free cash flow of the company. The free (net) cash flow is then discounted at the weighted average cost of capital (WACC) less the growth rate to determine the value of the continuing operating cash flows of the entity. The value driver model, on the other hand, discounts or capitalizes the adjusted net income of the company directly by the cost of capital. The analyst does not have to estimate the level of incremental investment of the entity. This method also eliminates the uncertainty surrounding the estimation of perpetual growth that is a major influence on the value using the Gordon Growth Method.

"For many companies in competitive industries, the return on net new investment can be expected to eventually converge to the cost of capital as all the excess profits are competed away. In other words, the return on incremental invested capital equals the cost of capital."[9] When this occurs, the resulting valuation model is known as the value driver (convergence) model and is defined as:

$$\text{Continuing Value(CV)} = \frac{\text{NOPLAT}_{T+1}}{\text{WACC}}$$

Where:

NOPLAT	=	Net operating profit less applicable taxes
WACC	=	Weighted average cost of capital
T + 1	=	First year after explicit forecast period

NOPLAT is often equal to debt-free net income, which is net income after tax plus tax-effected interest expense. It is also normalized EBIT times one minus the tax rate. When using the value driver model, NOPLAT is divided by the cost of capital. By contrast, in the Gordon Growth Model, cash flow is divided by the company's cost of capital minus its perpetuity growth rate. The value driver model assumes that the company's return on capital and cost of capital are the same regardless of the growth rate. There is no subtraction of a long-term growth rate.

> The growth term has disappeared from the equation. This does not mean that the nominal growth in NOPLAT will be zero. It means that growth will add nothing to value, because the return associated with growth just equals the cost of capital. This formula is sometimes interpreted as implying zero growth (not even with inflation), even though this is

[8] Tom Copeland, Tim Koller, and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies,* 2nd ed. (New York: John Wiley & Sons, Inc., 1995), p. 282.
[9] *Ibid.* See this work for further information on the value driver model.

clearly not the case. The average return on invested capital moves toward the weighted average cost of capital (WACC) as new capital becomes a larger portion of the total capital base.[10]

The expanded value driver formula is:

$$\text{Continuing Value} = \frac{NOPLAT_{T+1}\,(1 - g / ROIC)}{WACC - g}$$

Where:

$NOPLAT_{T+1}$	=	Normalized level of NOPLAT in the first year after explicit forecast period
g	=	Expected growth rate in NOPLAT in perpetuity
ROIC	=	Expected rate of return on net new investment

When ROIC is equal to the WACC, then the convergence formula, previously displayed, is the result.

In certain circumstances, the value driver model can be used to test the implicit return on net new investment (ROIC) that is within the Gordon Growth Model. The following equations for continuing value illustrate this.

Gordon Growth		Value Driver
$CV = \frac{CF_1}{WACC - g}$		$CV = \frac{NOPLAT_{T+1}\,(1 - g / ROIC)}{WACC - g}$
$\frac{CF_1}{WACC - g}$	=	$\frac{NOPLAT_{T+1}\,(1 - g / ROIC)}{WACC - g}$
CF_1	=	$NOPLAT_{T+1}\,(1 - g / ROIC)$
$ROIC$	=	$\frac{g}{1 - \frac{CF_1}{NOPLAT_{T+1}}}$

This formula can assist the analyst in determining whether the assumed return on net new investment (capital) is above, below, or at the cost of capital.

ValTip

The value driver method can result in a lower terminal value than the Gordon Growth Model. This is sometimes due to inaccurate assumptions in the Gordon Growth Model.

[10] *Ibid.*, p. 283–284.

CAPITALIZED CASH FLOW METHOD

The capitalized cash flow method of the income approach is an abbreviated version of the discounted cash flow method where growth (g) and the discount rate (k) are both assumed to remain constant into perpetuity.

Its formula is:

$$\frac{NCF_1}{(k - g)}$$

Where:

NCF_1	=	Net cash flow in year 1
k	=	Discount rate
g	=	Growth rate into perpetuity

Other than this constancy of growth and risk, the same theory and assumptions hold true for the CCF method as for the DCF method with regard to the economic benefit stream, measurement of risk, the affects of growth, and so forth. See the beginning of this chapter for additional details.

Relationship of Discounted Cash Flow Method to Capitalized Cash Flow Method

The CCF Method formula above works if the numerator, that is, the net cash flow, at the end of the first year divided by the capitalization rate (k – g) in the Gordon Growth Model equals the product of the DCF model with constant growth. Assume a constant growth rate of 6 percent and initial cash flow of $10,000. The "proof" would look something like Exhibit 4.17.

Since the CCF method is an abbreviated form of the DCF method, the theory that assets are worth the present value of their future economic income streams holds true with the CCF method. Moreover, as stated in the DCF method section, the economic income stream is a generalized term for any type of economic income (E) including but not necessarily limited to various types of cash flows, dividends, net income, earnings before taxes, and so on. Obviously, the more assured one is of receiving that future cash flow, the higher the value. The detail on determining the appropriate cash flow to be capitalized is discussed elsewhere in this chapter.

The present value factor for the denominator in the CCF method is called a capitalization rate and is made up of two components, the discount rate (k) and the long-term sustainable growth rate (g).

Where:	k	=	Discount rate commensurate with the future economic income
	g	=	Long-term sustainable growth rate

Exhibit 4.17 Relationship of DCF to CCF

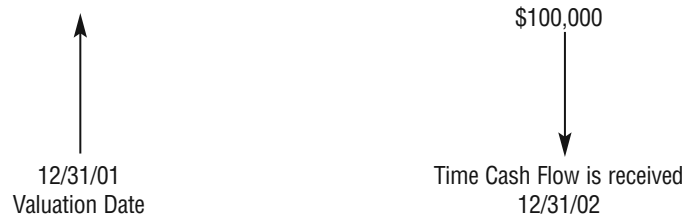
END of							
Period 1	$\frac{NCF_1}{(1+k)^1}$	=	$\frac{\$10{,}000\ (1+\mathbf{6}\%)}{(1+.26)^1}$	=	$\frac{\$10{,}600}{1.2600}$	=	$8,413
	+		+		+		+
Period 2	$\frac{NCF_2}{(1+k)^2}$	=	$\frac{\$10{,}600\ (1+\mathbf{6}\%)}{(1+.26)^2}$	=	$\frac{\$11{,}236}{1.5876}$	=	$ 7,077
	+		+		+		+
Period 3	$\frac{NCF_3}{(1+k)^3}$	=	$\frac{\$11{,}236\ (1+\mathbf{6}\%)}{(1+.26)^3}$	=	$\frac{\$11{,}910}{2.0004}$	=	$ 5,954
	+		+		+		+
Period 4	$\frac{NCF_4}{(1+k)^4}$	=	$\frac{\$11{,}910\ (1+\mathbf{6}\%)}{(1+.26)^4}$	=	$\frac{\$12{,}625}{2.5205}$	=	$ 5,009
	+		+		+		+
Period 5	$\frac{NCF_5}{(1+k)^5}$	=	$\frac{\$12{,}625\ (1+\mathbf{6}\%)}{(1+.26)^5}$	=	$\frac{\$13{,}382}{3.1758}$	=	$ 4,214
	+		+		+		+
	$\frac{\text{Terminal Value}}{\frac{NCF_5\ (1+g)}{(k-g)}}{(1+k)^5}$	=	$\frac{\text{Terminal Value}}{\frac{\$13{,}382\ (1+\mathbf{6}\%)}{(.26-\mathbf{.06})}}{(1+.26)^5}$	=	$\frac{\text{Terminal Value}}{\frac{\$14{,}185}{0.20}}{3.1758}$	=	$22,333
	The Sum of the Present Values of Expected Future Cash Flows Using the Gordon Growth Model to Calculate the Terminal Value						$53,000

Proof

End of Year Income		End of Year Income		End of Year Income		
$\frac{\$10{,}000\ (1+6\%)}{(k-g)}$	=	$\frac{\$10{,}600}{.26-.06}$	=	$\frac{\$10{,}600}{0.20}$	=	$53,000
Capitalization Rate		Capitalization Rate		Capitalization Rate		

The future economic benefit selected for the CCF model is the expected cash flow (or its equivalent) in the period following the valuation date. For example, if CF is $100,000 and the valuation date is December 31, 2001, then CF_1 is expected on December 31, 2002, as shown in Exhibit 4.18.

Exhibit 4.18 Expected Cash Flow



Midyear Convention for CCF

Like the DCF, the CCF method also can reflect cash flows being received evenly throughout the year with a short cut using the midyear convention.

The formula is:

$$PV_{\text{midyear}} = \frac{NCF_o \times (1+g)\,(1+k_e)^{.5}}{k_e - g}$$

EXCESS CASH FLOW METHOD

History of the Method

The excess cash flow method, referred to in many texts as the "excess earnings method," the "Treasury method," and the "formula method," is a blend of the asset and income approaches. It was introduced to estimate the intangible value of breweries and distilleries lost as a result of Prohibition in the 1920s. This method first appeared in a 1920 publication by the Treasury Department, Appeals and Review Memorandum Number 34 (ARM 34), but was later updated and restated in Revenue Ruling 68-609.

Over the years, this method has become popular in valuing businesses for divorce cases, especially in jurisdictions where goodwill is considered a nonmarital asset and is therefore segregated. In addition, this method is sometimes used for corporate C to S conversions and other scenarios where there is a need to isolate certain intangible assets. Its popularity is somewhat surprising, however, in light of the very first sentence of Revenue Ruling 68-609: "The 'formula' approach may be used in determining the fair market value of intangible assets of a business *only if there is no better basis available for making the determination*" (emphasis added).

Revenue Ruling 68-609 and ARM 34 discuss using the ECF to estimate the value of the intangible assets of a business rather than the total business assets. The ruling is often misread. Of particular concern is the ruling's reference to various percentage returns. The ruling states:

> A percentage return on the average annual value of the tangible assets used in a business is determined, using a period of years (preferable not less than five) immediately prior to the valuation date. The amount of the percentage return on tangible assets, thus determined, is deducted from the average earnings of the business for such period and the

remainder, if any, is considered to be the amount of the average annual earnings from the intangible assets of the business for the period. This amount (considered as the average annual earnings from intangibles), capitalized at a percentage of, say, 15 to 20 percent, is the value of the intangible assets of the business determined under the "formula" approach.

The percentage of return on the average annual value of the tangible assets used should be the percentage prevailing in the industry involved at the date of valuation, or (when the industry percentage is not available) a percentage of 8 to 10 percent may be used.

The 8 percent rate or return and the 15 percent rate of capitalization are applied to tangibles and intangibles, respectively, of businesses with a small risk factor and stable and regular earnings; the 10 percent rate of return and 20 percent rate of capitalization are applied to businesses in which the hazards of business are relatively high.

The above rates are used as examples and are not appropriate in all cases. In applying the "formula" approach, the average earnings period and the capitalization rates are dependent upon the facts pertinent thereto in each case.

The ruling is very clear, however, that these rates are merely suggested rates and should not be used without one's own analysis of risk/reward.

The ECF method can be prepared using either equity or invested capital returns and cash flows. The procedures, using an invested capital method are shown in Exhibit 4.19.

Exhibit 4.19 Procedures for ECF

Step No.	Procedure
1	Determine the fair market value of the "net tangible assets."
2	Develop normalized cash flows.
3	Determine an appropriate return (WACC) for the net tangible assets.
4	Determine the "normalized" cash flows attributable to "net tangible asset" values.
5	Subtract cash flows attributable to net tangible assets from total cash flows to determine cash flows attributable to intangible assets.
6	Determine an appropriate rate of return for intangible asset(s).
7	Determine the fair market value of the intangible asset(s) by capitalizing the cash flows attributable to the intangible asset(s) by an appropriate capitalization rate determined in step 6.
8	Add the fair market value of the net tangible assets to the FMV of the intangible assets.
9	Subtract any interest bearing debt to arrive at a value conclusion for equity.
10	Observe the overall capitalization rate for reasonableness.

Exhibit 4.20 Mathematical Steps for ECF

1.	Detemine the net tangible asset value.						$40,000,000
	Careful determination of the fair market value of the tangible assets (less operating liabilities)						
2	Determine normalized cash flows to invested capital.	→				Normalized Cash Flows	$10,500,000
	Adjustments would include those relating to normalizing annual earnings and control						
4	Determine the cash flows attributable to the net tangible asset value.	$40,000,000	×	15%	=		(6,000,000)
3	*Careful determination of an appropriate rate of return of the net tangible assets based upon relative risk factors*					Cash Flows Attributable to Net Tangible Assets	
5	Determine the cash flows in excess of the cash flows attributable to the net tangible assets (detemined above).	=	Excess Cash Flows Attributable to the Intangible Asset(s)			→	$ 4,500,000
	Subtract the cash flows attributable to the net tangible assets from the total normalized cash flows						
7	Using the capitalized cash flows method, detemine the fair, market value of the intangible asset(s) by dividing the excess cash flows by a capitalization rate commensurate with the intangible asset(s).		4,500,000 / 33%		=		$13,636,400
6	*Careful determination of an appropriate rate of return of the net intangible assets based on relative risk factors*						
8	Add back the value of the net tangible assets.						40,000,000
						Value of Invested Capital	53,636,400
9	Deduct long-term debt.						(10,000,000)
						Value of Equity Capital	$43,636,400

An example of the steps for a control value, mathematically, would look like Exhibit 4.20 (see prior page).

This method actually blends two rates of return, which is fairly similar to our WACC calculation, where the return on debt is blended with the rate of return on equity. In our example, the "blended rate" can be determined by simply dividing the total "nominal cash flows" by the total indicated value, or $10,500,000/$53,646,400 = 19.6 percent. This 19.6 percent appears fairly reasonable at a cursory glance. However, if the result was 10 percent or 40 percent, the reasonableness of the result would be subject to question. All in all, the ECF method can be a good "sanity test."

The following procedures are typically followed in the application of the ECF method.

Step 1. Determine the Fair Market Value of Net Tangible Assets

IRS Private Letter Ruling 79-05013 states that Rev. Rul. 68-609 addresses the determination of fair market value of intangible assets by the formula approach, and for this reason it is proper that all terms used in the formula be consistent. The formula uses value in terms of fair market value, so the term "value of the tangible assets used in a business," in the formula, should be in terms of fair market values, as defined in Rev. Rul. 59-60. Most analysts use the fair market value standard of value as well as the going concern premise for the ECF method.

What are "net tangible assets"? There seems to a general consensus that net tangible assets are composed of all current assets plus plant, property, and equipment plus other operating assets less current liabilities (debt-free for invested capital method). It can also be net equitiy or net invested capital (depending on the model used) without intangible assets. What is important is to match the rate of return to the selected definition of net tangible assets.

ValTip

Property (i.e., real estate) also may be segregated from tangible assets at the outset and added back in separately later on. Rent expense can be substituted for real estate-related expenses.

The GAAP book values of cash, receivables, and, to some extent, inventories can serve as good proxies for their respective fair market values. Real estate, plant, and equipment may require independent appraisals since their book values are usually not equivalent to FMV. The need for independent appraisals requires additional time, money, and effort, making it tempting to use "book values." However, since the book values of many operating assets are rarely equivalent to their fair market values, any valuation that uses only book values may not be appropriate.

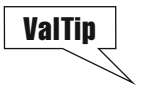
Normally, all intangible assets are excluded from "net tangible assets." However, some analysts include goodwill or other specific identifiable intangible assets acquired in prior purchases. Including these assets is problematic for two reasons:

1. Like all assets, intangibles must be stated at their respective fair market values, which usually is not an easy task.
2. The excess cash flow method uses a rate of return for net tangible assets commensurate with the particular bundle of tangible assets in the subject company's industry. The intangible assets may require a significantly different rate of return from the rest of the bundle.

Step 2. Develop "Normalized" Cash Flow

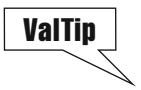
Many analysts agree that "cash flow" is the best proxy for a company's benefit stream. However, other benefit streams, such as net income, are often used. The analyst must remain cognizant of the need to properly match the capitalization rates with the benefit streams selected.

Previous sections have discussed adjustments required to normalize cash flows. Whether to include "control"-related adjustments or not generally depends on whether a minority or controlling interest is being valued. As presented here, the excess cash flows method yields a control value. Therefore, control-related adjustments as well as the other normalizing adjustments must be made to the benefit stream used in the excess cash flow method. These adjustments include normalization of owner's compensation.



If the control excess cash flow method is used and a minority value is the interest that is being valued, a discount for lack of control may be determined and applied.

The debate over whether S corporation cash flows should be adjusted for income taxes due to S corporation status is discussed in Chapters 3, 23, and 24. As with all valuation methods, any "nonoperating" assets and liabilities must be identified and segregated from the company's operating assets.



Assets that are normally considered operating assets may in reality be nonoperating. For example, excess cash and cash equivalents are actually nonoperating assets and can be isolated from the operating assets during normalization.

Step 3. Determine an Appropriate Blended Rate for Net Tangible Assets

There is general consensus that the rate of return for net tangible assets is based on the company's bundle of assets. The company's ability to borrow against this bundle, its cost of debt and its cost of equity are the other factors used in developing a rate of return on net tangible assets. Although some analysts may look at historical industry rates of return, these rates may not be a good representation of what will occur in the future. It is preferable, particularly for smaller companies, to build-up a rate of return using the risk-free rate, large- and small-company equity risk premiums, and the company's specific risk factors. See Chapter 5.

The debt portion of the blended rate is calculated by using those portions of the FMV of net tangible assets against which a lender would lend money. What cannot be financed with debt is financed with equity, as shown in Exhibit 4.21.

Exhibit 4.21 Rate for Net Tangible Assets

Asset Mix	FM Values	Financing Percentage	Lending Amount
Receivables	$ 300,000	70%	$ 210,000
Inventories	$ 500,000	60%	$ 300,000
Equipment, fixtures, etc.	$1,000,000	50%	$ 500,000
	$1,800,000		$1,010,000

Assumptions	Before Tax		After Tax
Company's Cost of Debt	12%	× (1−35%)*	8%
Company's Return on Equity	25%		25%

*Tax Rate

Calculation of Rate of Return

Debt Portion				
$1,010,000 / $1,800,000	×	8%	=	4%
Equity Portion				
$ 790,000 / $1,800,000	×	25%	=	11%
Weighted average required rate ("blended rate") for return on net tangible assets				15%

ValTip

The company's lending rates may be different if personal guarantees are required from the company's owners/officers and depending on the types of assets.

Step 4. Determine the Normalized Cash Flows Attributable to Net Tangible Assets (See Exhibit 4.22)

The cash flows attributable to net tangible assets would be equal to the sum of the FMVs of those assets times the blended rate for the bundle of assets.

Exhibit 4.22 Step 4

Determine the cash flows attributable to the net tangible asset value.	$40,000,000	×	15%	=	(6,000,000)
Careful determination of an appropriate rate of return of the net tangible assets based on relative risk factors →					*Cash Flows Attributable to Net Tangible Assets*

Step 5. Subtract Cash Flows Attributable to Net Tangible Assets from Total Cash Flows to Determine Cash Flows Attributable to Intangible Assets (See Exhibit 4.23)

Exhibit 4.23 Step 5

Determine normalized cash flows to invested capital. →	Normalized Cash Flows				$10,500,000
Adjustments would include those relating to normalizing annual earnings and control					
Determine the cash flows attributable to the net tangible asset value.	$40,000,000	×	15%	=	(6,000,000)
Careful determination of an appropriate rate of return of the net tangible assets based on relative risk factors →					Cash Flows Attributable to Intangible Assets
Determine the cash flows in excess of the cash flows attributable to the net tangible assets (determined above).	=	Excess Cash Flows Attributable to Intangible Assets →			$ 4,500,000

Step 6. Determine an Appropriate Rate of Return for Intangible Assets (See Exhibit 4.24)

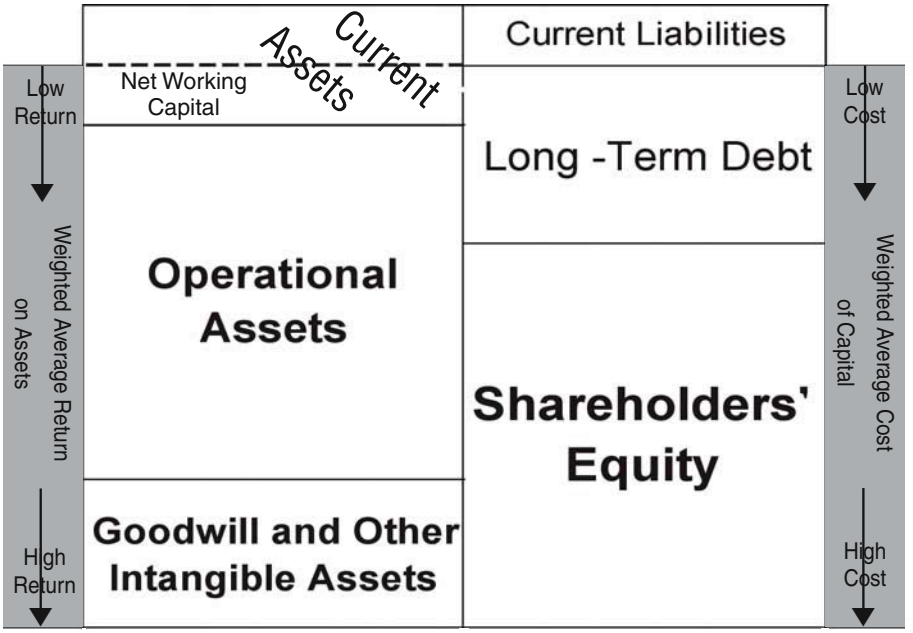
To better understand developing the required rate of return on intangible assets, the model shown in Exhibit 4.24 was developed.

ValTip

Whatever rate of return is used for goodwill, the aggregate return on all assets should approximate the weighted average cost of invested capital for the entity.

As this model shows, the sum of the individual weighted average returns on assets (including net working capital) equals the weighted average cost of capital for the entity. The more liquid and secure the assets, the lower the return that is required. Therefore, goodwill and other intangibles require higher returns.

Exhibit 4.24 Step 6



Step 7. Determine the Fair Market Value of the Intangible Assets by Capitalizing the Cash Flows Attributable to Them by an Appropriate Capitalization Rate (See Exhibit 4.25)

Exhibit 4.25 Step 7

Using the Capitalized Cash Flows Method, determine the fair market value of the intangible asset(s) by dividing the excess cash flows by a capitalization rate commensurate with the intangible asset(s).

$$\frac{4{,}500{,}000}{33\%} = \$13{,}636{,}400$$

Careful determination of an appropriate rate of return of the net intangible assets based on relative risk factors

Note: The capitalization rate of 33% was estimated for purposes of example presentation. Most analysts would use some adaptation of a build-up method, increasing the subjective risk premium to account for the risk on the intangible assets.

Step 8. Add Back the Fair Market Value of the Net Tangible Assets (See Exhibit 4.26)

Exhibit 4.26 Step 8

Using the Capitalized Cash Flows Method, determine the fair market value of the intangible asset(s) by dividing the excess cash flows by a capitalization rate commensurate with the intangible asset(s).	4,500,000 / 33%	=	$13,636,400
Careful determination of an appropriate rate of return of the net intangible assets based on relative risk factors			
Add back the value of the net tangible assets			40,000,000
	Value of Invested Capital		53,636,400

Step 9. Subtract Any Interest-Bearing Debt (See Exhibit 4.27)

Exhibit 4.27 Step 9

	Value of Invested Capital	53,636,400
Deduct Interest-Bearing Debt		(10,000,000)
	Value of Equity Capital	$43,636,400

Step 10. Reasonableness Test

$$\frac{\$10{,}500{,}000}{\$53{,}636{,}400} = 19.6\%$$

As can be seen from the calculation, the overall rate of return is 19.6 percent. This appears to be a reasonable capitalization rate on invested capital.

Conclusion

The excess cash flow method is often misused and misunderstood. Analysts must be sure that other methodologies would not be more appropriate. However, in many state courts, this method traditionally is widely accepted. Such acceptance may be a significant consideration in many valuations.

CONCLUSION

The income approach is probably the most widely recognized and utilized approach to valuing an entity. This chapter has discussed in detail the various methodologies that make up this approach. Anyone performing business valuations must have a thorough understanding of the complexities of this approach. However, these complexities mark the approach's flexibility. The income approach offers the analyst the opportunity to customize the calculations to the subject entity in many ways. Due to this flexibility, the income approach is often one of the best approaches to valuing an entity or ownership interest.

CHAPTER 5

Cost of Capital/Rates of Return

This chapter focuses on the cost of capital or rates of return for equity and for invested capital (which includes interest-bearing debt). Both of these are explicitly used in the income approach through the application of discount and capitalization (cap) rates to the economic benefit stream. These same concepts are also implicitly used via price earnings (P/E) multiples in the market approach because a P/E multiple is the reciprocal of an earnings capitalization rate applicable to earnings under the income approach. These sources of cost of capital will be discussed here.

THREE VARIABLES

In the income approach, the value of the company is a function of three variables:

1. The economic benefit stream, typically cash flow
2. The growth potential of the company being valued, both short and long term
3. The risk involved in receiving the benefits (i.e., the discount rate)

The value of any enterprise will vary directly with its expected level of economic benefit and the expected growth of such benefits. The value will vary inversely with the riskiness of that anticipated economic benefit stream because the increase in risk demands a higher rate of return. Often a business enterprise, particularly in the small and midsize markets, is focused on the benefit stream and growth potential variables while too often the risk is left to chance. Assuming no change in the first two variables, reducing the risk attributes of a business will increase its value.

ValTip

Identifying the value drivers of an enterprise and developing action steps to limit or reduce controllable (e.g., internally oriented versus external) risks can be of great benefit to many closely held businesses.

CHARACTERISTICS OF COST OF CAPITAL[1]

The cost of capital for an enterprise represents the economic cost of attracting and retaining capital in a competitive environment where investors carefully analyze and compare all investment opportunities. Some basic concepts follow:

- The cost of capital is the *expected rate of return* that the market requires to attract funds to a particular investment. It is based on investor expectations. Actual past returns are relevant to an estimate of cost of capital only to the extent that they are believed representative of future expectations.
- The cost of capital depends on the investment, *not* the investor—that is, it depends on the *riskiness of the investment* rather than the risk characteristics of the investor.
- In economic terms, the cost of capital is an *opportunity cost*—that is, the cost of forgoing the next best alternative investment (equivalent risk at higher expected return or lowered risk at same expected return).
- The cost of capital concept is based on the *principle of substitution*—an investor will not invest in a particular asset if there is a more attractive substitute.
- The cost of capital is *market driven*—it is the competitive rate of return available in the market on a comparable investment (i.e., an investment with equivalent riskiness).
- The most important component of comparability is *risk*, which is the degree of certainty (or lack of it) that the investor will realize the expected returns at the times specified. Since risk cannot always be observed directly, analysts have developed several ways to estimate it using available market data (generally based on some past period of time).
- Each component of a company's capital structure (e.g., debt and equity) has a cost of capital.

INVESTOR EXPECTATIONS AS QUANTIFIED BY THE COST OF CAPITAL[2]

Three basic components of investor expectations are captured in the cost of capital:

1. The "real" rate of return that investors expect in exchange for letting someone else use their money on a risk-less basis
2. Expected inflation—the expected depreciation in purchasing power while the money is tied up
3. Risk—the uncertainty about when and how much cash flow or other economic benefit will be received

The combination of the first two expectations is sometimes referred to as the "time value of money." This can vary for different investors, although the market

[1] Pratt, Shannon P., *Cost of Capital: Estimation and Applications* (New York: John Wiley & Sons, Inc., 1998), p. 3. (Used with permission.)
[2] *Ibid.,* p. 5. (Used with permission.)

tends to form a consensus regarding a particular investment or category of investments. That consensus forms the cost of capital for investments of varying levels of risk.

COST OF CAPITAL EQUALS DISCOUNT RATE

The cost of capital is also referred to as the discount rate. It equals the total expected rate of return for the investment, that is, dividends or withdrawals, plus expected capital appreciation over the life of the investment. This rate, when applied to the appropriate income or cash flow stream of a company, will give an estimate of the company's value.

ValTip

The value of a company can be expressed as the present fair market value of all of the future economic benefits that are expected to be generated by the company.

COST-OF-CAPITAL METHODS

Several methods are available to calculate the cost of capital or discount/cap rate for a specific investment. Some of the more common methods include:

- Buildup method
- Capital asset pricing model (CAPM) method
- Modified capital asset pricing model (MCAPM) method
- Weighted average cost of capital (WACC) method
- Price/earnings method

Each of these methods is discussed in detail later in this chapter. We also briefly discuss arbitrage pricing theory (APT), the build-up summation model, and certain aspects of the excess cash flow (ECF) method as it relates to cost of capital determinations.

MORE ON THE BASIC CONCEPTS

The value of an interest in a closely held business typically is considered to be the present value of the future economic benefit stream, typically cash flow. This economic benefit is discounted at an appropriate discount rate to reflect the risks associated with the certainty of receiving such future economic benefits.

No one buys a business or other property simply because of what it has accomplished in the past or even what it consists of at present. Although these may be important considerations in determining what the business or other property is likely to do in the future, it is the anticipated future performance of a business that gives it economic value.

ValTip

Values are reflections of the future, not the past, not even the present.

DISCOUNT RATE, CAPITALIZATION RATE, AND ANTICIPATED GROWTH

A discount rate is used to calculate the present value of future projections of a benefit stream when growth will vary from year to year. The projections reflect the growth of the business. However, if growth is estimated to remain level throughout the future life of the investment, a capitalization rate often is used. In its most elementary form, the relationship between a discount and a capitalization rate can be summarized as:

$$\text{Capitalization rate} = \text{Discount rate} - \text{Growth}$$

The application of the discounted cash flow (DCF) method with constant growth will result in the same value as the capitalization of cash flow (CCF) method. This is illustrated by the following example (Exhibit 5.1 and 5.2). In Exhibit 5.1 the application of the traditional DCF method with a terminal year value determined by the Gordon Growth Model results in exactly the same value as the CCF method. This is corroborated in Exhibit 5.2 which shows the cash flows going out 50 years resulting in almost the same value ($499,918.17 versus $500,000). It also illustrates how small the present value factors are beyond 15 years or so. For example, the present value over just 15 years is only about 7 percent less than the value into perpetuity.

GROWTH

One of the critical areas where analysts are required to exercise their professional judgment is the assessment of future growth prospects for the subject entity. Over the past decade or two, the public markets have witnessed many companies that have experienced high short-term growth rates. For example, in December 1998 analysts announced that the projected growth rates for CISCO Systems, Inc. would taper off from 55 percent in 1998 to 25 percent to 30 percent for the next five years.[3] Very few companies, if any, can sustain such high growth rates forever. This fact creates a need for longer-term growth assumptions. However, usually no long-term growth rates are forecasted. Since most companies are valued into perpetuity, short-term growth rates are helpful but incomplete. The meteoric rise and fall of short-term growth rates for whole market sectors has created problematic valuation data and circumstances. There is often a need to identify companies capable of "sustainable growth," that is, a level of continued growth that the enterprise can reasonably be expected to sustain over the long term.

[3] Paul Larson, "Cisco Bear's Den," *The Motley Fool* (December 16, 1998).

Exhibit 5.1 An Example of the Relationship Between Discount Rates, Cap Rates and Growth

Discounted Cash Flow Method

Assumptions: Year One normalized cash flow is $100,000
Growth rate is 5%
Discount rate is 25%

	Forecasted Cash Flow	Present Value Factor for 25% Discount Rate	Present Value
Year 1	100,000	.8	80,000
Year 2	105,000	.64	67,200
Year 3	110,250	.512	56,448
Year 4	115,763	.4096	47,416
Year 5	121,551	.32768	39,830
Terminal Value	*638,141	.32768	209,106
Value Estimate—Discounted			$500,000

*Terminal Value:

Year 5 cash flow	$121,551
Growth factor	× 1.05
Year 6 cash flow	= 127,628
Cap Rate (25% - 5%)	÷ .20
	= $638,141

Capitalization of Cash Flow Method

Year 1 cash flow/cap rate = Value estimate
$100,000/(25% − 5%) = $500,000

ValTip

In valuing a company, analysts need to estimate sustainable growth into perpetuity, not just short-term growth.

Valuation analysts regularly value entities whose growth is either highly erratic or currently advancing at a much higher rate than can be sustained into perpetuity. In both instances, it is likely that analysts will select a discount rate by which to value such "abnormal" benefits streams during a limited future period and then use a terminal year capitalization rate to value the perpetual benefit stream once true sustainable growth can be achieved. This can be achieved by using the DCF method of the income approach, which is explained in Chapter 4. The challenge is to determine the appropriate adjustment for long-term sustainable growth and to convert the discount rate used during the abnormal period to a capitalization rate to be used forward into perpetuity.

Exhibit 5.2 Discount Rates and Growth (Growth / Year = 5%, Ke = 25%)

No.	End of Yr	CF	Discount rate	PV
1	1	100,000.00	0.8000	80,000.00
2	2	105,000.00	0.6400	67,200.00
3	3	110,250.00	0.5120	56,448.00
4	4	115,762.50	0.4096	47,416.32
5	5	121,550.63	0.3277	39,829.71
6	6	127,628.16	0.2621	33,456.96
7	7	134,009.56	0.2097	28,103.84
8	8	140,710.04	0.1678	23,607.23
9	9	147,745.54	0.1342	19,830.07
10	10	155,132.82	0.1074	16,657.26
11	11	162,889.46	0.0859	13,992.10
12	12	171,033.94	0.0687	11,753.36
13	13	179,585.63	0.0550	9,872.82
14	14	188,564.91	0.0440	8,293.17
15	15	197,993.16	0.0352	6,966.27
16	16	207,892.82	0.0281	5,851.66
17	17	218,287.46	0.0225	4,915.40
18	18	229,201.83	0.0180	4,128.93
19	19	240,661.92	0.0144	3,468.30
20	20	252,695.02	0.0115	2,913.38
21	21	265,329.77	0.0092	2,447.24
22	22	278,596.26	0.0074	2,055.68
23	23	292,526.07	0.0059	1,726.77
24	24	307,152.38	0.0047	1,450.49
25	25	322,509.99	0.0038	1,218.41
26	26	338,635.49	0.0030	1,023.46
27	27	355,567.27	0.0024	859.71
28	28	373,345.63	0.0019	722.16
29	29	392,012.91	0.0015	606.61
30	30	411,613.56	0.0012	509.55
31	31	432,194.24	0.0010	428.02
32	32	453,803.95	0.0008	359.54
33	33	476,494.15	0.0006	302.01
34	34	500,318.85	0.0005	253.69
35	35	525,334.80	0.0004	213.10
36	36	551,601.54	0.0003	179.00
37	37	579,181.61	0.0003	150.36
38	38	608,140.69	0.0002	126.31
39	39	638,547.73	0.0002	106.10
40	40	670,475.12	0.0001	89.12
41	41	703,998.87	0.0001	74.86
42	42	739,198.81	0.0001	62.88
43	43	776,158.76	0.0001	52.82
44	44	814,966.69	0.0001	44.37
45	45	855,715.03	0.0000	37.27
46	46	898,500.78	0.0000	31.31
47	47	943,425.82	0.0000	26.30
48	48	990,597.11	0.0000	22.09
49	49	1,040,126.96	0.0000	18.56
50	50	1,092,133.31	0.0000	15.59
			Total	499,918.17
			Rounded	500,000.00

ValTip

Since 1926, the U.S. economy has been able to sustain a nominal growth rate of approximately 6 percent over time. This is a combination of the real growth rate and inflation.

Some analysts believe that in a capitalistic society, it is reasonable to assume that any business entity's growth, regardless of short-term prospects, will eventually plateau at the 6 percent long-term level of growth for the economy. This change in average economic growth is due to competition, which initially is attracted to higher-growth industries putting pressure on profit margins and growth.

A thorough evaluation of the subject company's historical growth can be utilized to assist in this growth determination. Published estimates of industry growth rates, such as that compiled by Ibbotson Associates (Ibbotson) (from over 2,500 securities analysts), can also be relevant analytical tools. Currently many analysts use a long-term sustainable growth rate between 3 percent and 6 percent, depending on the underlying characteristics of the subject entity, its industry, and its future prospects. Some analysts use the anticipated inflation rate, which has averaged approximately 3 percent historically. This rate assumes no real growth in the underlying business.

ValTip

Overall, the deciding factor in determining how to reflect growth in the rates of return still must be informed professional judgment.

The relationship between risk and growth is illustrated in Exhibits 5.3 to 5.6. Exhibit 5.3 presents various values in a matrix based on varying growth rates and discount rates. Exhibits 5.4 to 5.6 show similar matrices but compare changes in profit margins to changes in growth rates at discount rates of 18, 20,

Exhibit 5.3 Discount Rate versus Growth Rate

Values ($000)
$PV = CF_1 / (k_e - g)$; CF_1 = $100,000

		Growth Rate				
		2%	4%	6%	8%	10%
Discount Rate	16%	714	833	1,000	1,250	1,667
	18%	625	714	833	1,000	1,250
	20%	556	625	714	833	1,000
	22%	500	556	625	714	833
	24%	455	500	556	625	714

Exhibit 5.4 Growth Rate versus Margin (K_e = 18%)

Values ($000)
PV = $CF_1/ (k_e – g)$
6% Margin = $100,000; k_e = 18%

		Growth Rate				
		2%	**4%**	**6%**	**8%**	**10%**
Margin	2%	208	238	278	333	417
	4%	417	476	556	667	833
	6%	625	714	833	1,000	1,250
	8%	833	952	1,111	1,333	1,667
	10%	1,042	1,190	1,389	1,667	2,083

Exhibit 5.5 Growth Rate versus Margin (K_e = 20%)

Values ($000)
PV = $CF_1/ (k_e – g)$
6% Margin = $100,000; k_e = 20%

		Growth Rate				
		2%	**4%**	**6%**	**8%**	**10%**
Margin	2%	185	208	238	278	333
	4%	370	417	476	556	667
	6%	556	625	714	833	1,000
	8%	741	833	952	1,111	1,333
	10%	926	1,042	1,190	1,389	1,667

Exhibit 5.6 Growth Rate versus Margin (K_e = 22%)

Values ($000)
PV = $CF_1/ (k_e – g)$
6% Margin = $100,000; k_e = 22%

		Growth Rate				
		2%	**4%**	**6%**	**8%**	**10%**
Margin	2%	167	185	208	238	278
	4%	333	370	417	476	556
	6%	500	556	625	714	833
	8%	667	741	833	952	1,111
	10%	833	926	1,042	1,190	1,389

and 22 percent. These charts illustrate the sensitivity of these factors and the effect on value.

Exhibit 5.7 is a chart showing values (using CCF) with growth rates from 0 to 10 percent and discount rates from 10 to 30 percent. This can be used as a ready tool to derive value by multiplying next year's cash flow (CF_1) of the company being valued by the factor in the table. It is also a tool to test the sensitivity of important assumptions.

RELATIONSHIP BETWEEN RISK AND COST OF CAPITAL

Defining Risk[4]

Financial economics divides risk into three major categories: maturity, systematic, and unsystematic. Maturity risk is the reflection of changes in interest rates over the term of the investment. "Stated in non-technical terms, *systematic risk* is the uncertainty of future returns owing to the sensitivity of the return on the subject investment to movements in the returns for a composite measure of marketable investments. *Unsystematic risk* is a function of the characteristics of the industry, the individual company, and the type of investment interest."[5]

Maturity Risk

> Maturity risk (also called horizon risk or interest rate risk), is the risk that the value of an investment may go up or down because of changes in the general level of interest rates. The longer the term of the investment, the greater the maturity risk. For example, market prices of long-term bonds fluctuate much more in response to changes in levels of interest rates than do short-term bonds or notes. When we refer to yields of U.S. Government bonds as *riskless rates*, we mean that we regard them as free from the prospect of default, but we recognize that they do incorporate maturity risk: the longer the maturity, the greater the susceptibility to change in market price in response to changes in market rates of interest.[6]

Systematic Risk

Systematic risk can be defined as the uncertainty of future returns due to uncontrollable movements in the market as a whole. This type of risk generally arises from external, macroeconomic factors that affect all economic assets within the economy as a whole. Diversifiable risk, on the other hand, is based on firm-specific factors.

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[4] Portions of this section have been taken with permission from "Unsystematic Risk and Valuation" (Part I), 1999, by Warren Miller. Readers should refer to what is currently expected to be a seven-part series, "Assessing Unsystematic Risk," appearing in a quarterly newsletter from AICPA, *CPA Expert*. Four installments have appeared: "Assessing Unsystematic Risk" (Summer 1999), pp. 1–5, "Assessing Unsystematic Risk: Part II—The Macroenvironment" (Winter 2000), pp. 1–5, "Assessing Unsystematic Risk: Part III—Market Structure" (Fall 2000), pp. 1–5, and "Assessing Unsystematic Risk: Part VI—Industry Dynamics" (Winter 2001), pp. 1–5.

[5] *Ibid,* Pratt, Shannon P., *Cost of Capital: Estimation and Applications,* p. 71. Used with permission.

[6] *Ibid,* p. 36.

Exhibit 5.7 Capitalized Value (PV)

$$PV = CF_1 / (K_e - g)$$

Discount Rate (K_e)	Growth Rate (g)										
	0%	**1%**	**2%**	**3%**	**4%**	**5%**	**6%**	**7%**	**8%**	**9%**	**10%**
10%	10.00	11.11	12.50	14.29	16.67	20.00	25.00	33.33	50.00	100.00	N/A
11%	9.09	10.00	11.11	12.50	14.29	16.67	20.00	25.00	33.33	50.00	100.00
12%	8.33	9.09	10.00	11.11	12.50	14.29	16.67	20.00	25.00	33.33	50.00
13%	7.69	8.33	9.09	10.00	11.11	12.50	14.29	16.67	20.00	25.00	33.33
14%	7.14	7.69	8.33	9.09	10.00	11.11	12.50	14.29	16.67	20.00	25.00
15%	6.67	7.14	7.69	8.33	9.09	10.00	11.11	12.50	14.29	16.67	20.00
16%	6.25	6.67	7.14	7.69	8.33	9.09	10.00	11.11	12.50	14.29	16.67
17%	5.88	6.25	6.67	7.14	7.69	8.33	9.09	10.00	11.11	12.50	14.29
18%	5.56	5.88	6.25	6.67	7.14	7.69	8.33	9.09	10.00	11.11	12.50
19%	5.26	5.56	5.88	6.25	6.67	7.14	7.69	8.33	9.09	10.00	11.11
20%	5.00	5.26	5.56	5.88	6.25	6.67	7.14	7.69	8.33	9.09	10.00
21%	4.76	5.00	5.26	5.56	5.88	6.25	6.67	7.14	7.69	8.33	9.09
22%	4.55	4.76	5.00	5.26	5.56	5.88	6.25	6.67	7.14	7.69	8.33
23%	4.35	4.55	4.76	5.00	5.26	5.56	5.88	6.25	6.67	7.14	7.69
24%	4.17	4.35	4.55	4.76	5.00	5.26	5.56	5.88	6.25	6.67	7.14
25%	4.00	4.17	4.35	4.55	4.76	5.00	5.26	5.56	5.88	6.25	6.67
26%	3.85	4.00	4.17	4.35	4.55	4.76	5.00	5.26	5.56	5.88	6.25
27%	3.70	3.85	4.00	4.17	4.35	4.55	4.76	5.00	5.26	5.56	5.88
28%	3.57	3.70	3.85	4.00	4.17	4.35	4.55	4.76	5.00	5.26	5.56
29%	3.45	3.57	3.70	3.85	4.00	4.17	4.35	4.55	4.76	5.00	5.26
30%	3.33	3.45	3.57	3.70	3.85	4.00	4.17	4.35	4.55	4.76	5.00

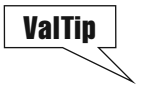
ValTip

For publicly held companies, systematic risk is captured by a measurement referred to as the *beta* of the enterprise.

Beta is the factor by which the excess market return (in excess of the risk-free rate) is multiplied, with the product then added to the risk-free rate to estimate the cost of equity capital for that company. That cost is in its purest form with no adjustment for unsystematic risk. That is because one of the underlying assumptions of portfolio management theory is that unsystematic risk does not exist because rational investors diversify it away. Variability in an entity's rate of return—[dividends + capital appreciation]/its stock price—is compared to variability in the rate of return on an underlying market index. The Standard and Poor's (S&P) 500 and the New York Stock Exchange (NYSE) indexes are the two most common benchmarks. The result is a proxy for systematic risk referred to as the beta for that specific enterprise. By definition, the beta of the market (i.e., underlying index) as a whole is equal to a value of 1.0. A stock with a beta greater than 1 will evidence greater volatility in its rates of return than the market, and a stock with a beta less than 1 will evidence less

volatility in its rates of return than the market. Stocks with betas of 1 have rates of return whose movements match the movement of the market.

Privately held company ownership interests also demonstrate systematic risk (i.e., sensitivity to the movement of market rates of return). However, it is very difficult to develop betas to measure their level of systematic risk.



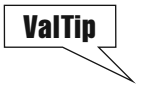
It is common to assume a privately held company's beta as 1.0 and develop separate risk factors to include in its overall rate of return calculations or to use a beta for an industry group or from guideline public companies.

Unsystematic Risk

Unsystematic risk is the uncertainty of future returns as a function of something other than movements in market rates of return, such as the characteristics of an industry, enterprise, or type of investment. Examples of circumstances that can create or increase unsystematic risk include high product or technological obsolescence, unforeseen loss of management expertise, and negative changes in labor relations.

Classical financial theory, formulated in the Capital Asset Pricing Model (CAPM; described later), assumes that rational investors will eliminate their exposure to unsystematic risk through maintaining fully diversified portfolios. However, this assumption is based on the existence of other interlocking assumptions, the absence of which, in a privately held company setting, creates the need for the valuation analyst to identify and quantify unsystematic risk as a part of an overall rate of return. Some of these assumptions include:

- Investors have access to perfect information for decision-making purposes.
- There are no taxes to be considered.
- The decision maker is fully rational.



The estimation of unsystematic risks is one of the more difficult aspects of calculating rates of return.

Types of Unsystematic Risk

Unsystematic risk has four primary sources: the size of the firm, its macroenvironment, its industry (or strategic group), and specific company attributes.

1. *Size*. Two ongoing studies[7] monitor the impact of the size effect on rates of return. Although they use different methodologies and overlapping sampling populations, their conclusions are identical: the smaller the company, the greater the risk.
2. *Macroenvironment*. The macroenvironment comprises six forces (economic, technological, sociocultural, demographic, international, and political) with subforces beneath each.[8] Most companies monitor these forces to minimize the negative impact of sudden macroenvironmental changes. Except for technological innovation, the ability of companies to influence these forces is minimal.
3. *Industry*. According to Michael E. Porter, a noted economist and one of the leading theorists and researchers on strategic thinking, the *industry*-related risk is made up of five forces: the threat of new entrants, bargaining power of suppliers, bargaining power of customers, threat of substitutes, and rivalry.[9] Unlike macroenvironmental forces, industry factors can be influenced by the purposeful actions of insightful managers. For companies that do not compete industry-wide (which includes many closely held businesses), the term "strategic group" describes their "industry." There can be many strategic groups within an industry. However, Porter's five forces remain the same, whether for an industry or for a strategic group. This concept of strategic groups is also discussed briefly a bit further into this chapter within the discussion of the recent Ibbotson Associates industry risk premia.
4. *Specific Company Attributes*. Companies need to constantly monitor change and have the resolve and the resources to act. Many times companies must modify their corporate culture to adapt to change.

TYPES OF RISK—ANOTHER VIEW

Ten other types of risk can be examined in conjunction with business valuation assignments[10]:

1. *Economic Risks*. The analyst must determine how the subject company will be affected by changes in the economic environment within which it operates. For example, what effect will anticipated changes in interest rates have on the company and industry?

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[7] Ibbotson Associates, *Stocks, Bonds, Bills & Inflation—2000 Yearbook* (Valuation Ed.) Chicago, and the PriceWaterhouseCoopers Risk Premia Study conducted by Roger Grabowski and David King of PwC's Chicago office.

[8] Liam Fahey and V. K. Narayanan, *Macroenvironmental Analysis for Strategic Management* (St. Paul: West Publishing Company, 1986), p. 29, and *Strategic Management: Competitiveness and Globalization,* 3rd ed., by Michael A. Hitt, R. Duane Ireland, and Robert E. Hoskisson (Cincinnati: South-Western Publishing Company, 1999), pp. 50–60.

[9] Porter, Michael E., "How Competitive Forces Shape Strategy," *Harvard Business Review* (May-June 1979), pp. 137–145. The follow-up book appeared in 1980, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (New York: The Free Press). In 1998, Porter wrote a new introduction for this landmark book.

[10] Trugman, Gary, *Understanding Business Valuation* (American Institute of Certified Public Accountants, 1998), pp. 136–138. Reprinted with permission, copyright © 1998 by American Institute of Certified Public Accountants, Inc.

2. *Business Risks*. The analyst can analyze the company in terms of the risk associated with factors such as sales and growth volatility.
3. *Operating Risks*. The analyst can analyze the subject company to determine how much risk the company is exposed to as a result of the commitments and costs associated with its operations. This assessment includes an analysis of fixed versus variable costs.
4. *Financial Risks*. The financial risks associated with a company pertain to the amount of leverage the company uses and the company's ability to cover its debt payments. The analyst can analyze the capital structure of similar companies to compare the subject company and its risk profile.
5. *Asset Risks*. These risks relate to the age and condition of the company's assets. Older assets represent a higher degree of risk for a company in terms of higher maintenance costs, lower productivity, and functional and technological obsolescence.
6. *Product Risks*. Product risks relate to diversification in a company's product line including product lines that may become extinct with the introduction of newer products by competitors.
7. *Market Risks*. This type of risk relates to how well the company is geographically diversified. If the company operates within a local marketplace, changes in the local area can greatly affect it. A more diversified geographical market can reduce the risk associated with a company.
8. *Technological Risks*. New technology can adversely affect a company if it does not have the ability to keep up with the other companies in its industry.
9. *Regulatory Risks*. Regulatory agencies can adversely affect a business. Environmental regulations are probably one of the best examples of regulatory risk.
10. *Legal Risks*. The cost of litigation can cause the end of a successful business. Even if successful, litigation can create such a financial burden on a business that it can no longer function as a going concern.

ValTip

Every business enterprise will have its own unique attributes and risks, which can be incorporated into the rate of return.

RISKS IN A SMALL BUSINESS

Small businesses have their own set of risk attributes that will need careful attention to ensure they have been included in cost of capital calculations. Some of the questions the analyst will want to ask are:

- How much additional risk is associated with the small size of the subject company?
- How much additional risk is associated with the one or two key employees who are the driving force in the company and are generating the benefits to the owners? Could they be replaced in case of death or departure from the company, and

what would the effects be on the economic benefit stream of the company? Is there an employment/noncompete agreement in place in case they decide to leave the company?

- How much additional risk is associated with the company's access to additional financing? Can it finance its growth and at what cost? What effect does this have on the company's leverage? What role do the key persons play in obtaining the financing such as personal guarantees and use of personal wealth?

Typically, the concentration of an investment into one closely held company entails higher risk than investing in the stock market, where diversification can reduce or eliminate specific company risk. In many smaller closely held companies this means higher risk, higher returns, and lower value. Small business risk is explained in greater detail later in this chapter.

METHODS FOR DEVELOPING COST OF CAPITAL

Build-Up Method

The build-up method is often used by analysts who work with small and medium-size businesses. In a build-up method, the discount rate is calculated by adding together the analyst's assessment of the systematic and unsystematic risks associated with a particular subject company or ownership interest. The most widely used methodology for deriving a rate under this approach uses four or five basic elements to derive an indication of a discount rate with a least one element being based on empirical evidence compiled by Ibbotson Associates.[11] The rest of this section deals with the use of Ibbotson data for calculation of a rate of return derived by the build-up method.

The basic formula for the traditional build-up model is:

$$E(R_i) = R_F + RP_m + RP_s + RP_u$$

Where:

$E(R_1)$ = Expected (market required) rate of return on a security

R_f = Rate of return for a risk-free security as of the valuation date

RP_m = Equity risk premium for the "market"

RP_s = Risk premium for small size

RP_u = Risk premium for specific company, where u stands for unsystematic risk

Risk-Free Rate

The first component of the discount rate is the risk-free rate of return. This is often referred to as the safe rate or the cost of money and is the rate available on investments that are considered to have no risk of default. The most commonly used source for the risk-free rate of return is the twenty-year U.S. Treasury Bond. It is widely used because Ibbotson data (to be explained later) used to derive the equity

[11] Ibbotson Associates, Inc., *Cost of Capital Yearbook/Cost of Capital Quarterly,* 225 North Michigan Avenue, Suite 700, Chicago, IL 60601-7676, (312) 616-1620.

risk premium have been calculated based on this 20-year Treasury bond benchmark for all periods from 1926 to present. It also reflects a long-term investment, an assumption used in most closely held business valuations.

Equity Risk Premium

The next component is the equity risk premium, the premium that investors must receive to entice them to invest in the public equity markets instead of long-term government securities. Most business analysts use a long-term investment horizon with the S&P 500 as a benchmark for this component.

Ibbotson Associates provides these data in their annual publication *Stocks, Bonds, Bills, and Inflation (SBBI)*. The data are computed by first finding the total "excess" returns for the public markets over the returns on annual 20-year government bond rates for a specific period of time, usually 1926 to present, and then taking either an arithmetic or a geometric mean average return for that period.

ValTip

There is no direct source for returns on 20-year Treasury bonds. Analysts can consult *The Wall Street Journal* to find the quoted market yields on 30-year bonds with approximately 20 years of maturity left. Another source for this data is the St. Louis branch of the Federal Reserve Bank, which maintains an extensive inventory of historical yield rates on all types of government securities, including a continuing proxy for the 20-year constant maturity Treasury bond. This can be found online at *www.stls.frb.org/fred/data/irates/gs20*.

While these average values are calculated using both geometric and arithmetic mean averages, Ibbotson recommends use of the arithmetic mean as the best indication of the equity risk premium. The arithmetic calculation gives the best indication of what will occur next, assuming past history is the correct proxy.

Size Premium

The size premium often is added when valuing smaller, closely held businesses. Empirical evidence demonstrates that as the size of a company decreases, the risk to that company increases. Therefore, a smaller company must pay an additional premium to attract funds.

The terms "small stock premium" and "size premium" are both used to describe the size effect noted above, but each is based on a different set of assumptions and can be used differently in practice. Empirical data points are provided in the Ibbotson Associates *SBBI* books (*Classic* and *Valuation* editions) for both premiums since both are used regularly by the different markets served by the SBBI data. This discussion focuses mostly on the *Valuation Edition, 2001 Yearbook*.

Small-Stock Premium

Security analysts use small-stock premiums in constructing an expected return for a small-stock benchmark used in forecasting applications. It is reflected in the *SBBI* books as the arithmetic difference between the S&P 500 stock returns and the small stock segment of the market. According to the studies by Ibbotson (2001 Yearbook), the smaller public stocks that make up the microcap segment of the market have "outperformed" their larger counterparts by 5.4 percent (non–beta adjusted) over the last 75 years.

SIZE PREMIUMS

Size premiums, which are used more often by valuation analysts, are presented for each of the 10 deciles of the public securities market. The size premium, which relies on the CAPM model, entails a more complex measurement process. The specific size premium figures reflect the excess returns required on smaller securities after adjusting for the systematic risks captured in the beta adjustment. In other words, the size premia data presented by Ibbotson that are most widely used by valuation analysts today have been adjusted for all other systematic influences, except size.

Does Size Matter?

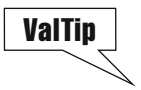
There is continuing debate over which size premia should be used. Some analysts even have argued against including a size premia adjustment for smaller companies altogether. Recent studies have been used to advance both sides of this argument, but most analysts agree that some adjustment should be made to account for the fact that, over time, smaller entities in the public markets have demanded higher rates of returns, generally speaking, than their larger counterparts. As recently as September 2001, both Michael W. Barad[12] of Ibbotson and Dr. Shannon P. Pratt[13] have been featured in articles highlighting the need for a size premium adjustment when using the traditional build-up model to derive rates for use in valuing smaller closely held businesses.

In a presentation called, "The Small Company Risk Premium: Does it Really Exist?" Jeffery S. Tarbell[14] presented a list of factors that typically reflect the increased risks of smaller companies:

- Difficult to raise financing
- Lack of product, industry and geographic diversification
- Inability to expand into new markets
- Key person management risk
- Lack of management expertise
- Higher sensitivity to economic movements

[12] Barad, Michael W., "Technical Analysis of the Size Premium," *CCH Business Valuation Alert* (September 2001).
[13] Pratt, Shannon P. "Small Stock Risk Premium No Myth: Size Does Matter," *Business Valuation Update* (September 2001).
[14] Tarbell, Jeffery S., "The Small Company Risk Premium: Does it Really Exist?" American Society of Appraisers, 18th Annual Advanced Business Valuation Conference, New Orleans, LA, October 1999.

- Lack of dividend history
- Higher sensitivity to business risks, supply squeezes and demand lulls
- Inability to control or influence regulatory and union activity
- Lack of economies of scale or cost disadvantages
- Lack of access to distribution channels
- Lack of relationships with suppliers and customers
- Lack of product differentiation or brand name recognition
- Lack of deep pockets necessary for staying power
- Lack of externally generated information, including analyst coverage, resulting in a lack of forecasts
- Lack of adequate press coverage and other avenues to disseminate company-generated information
- Lack of internal controls
- Lack of infrastructure
- Possible lack of internal reporting
- Smaller-capitalization companies are viewed as riskier by the credit markets, resulting in:
  - Higher interest rate spreads
  - Lower multiples of EBITDA for financing
  - Lower collateralization rates
  - More restrictive covenants
  - Less use of stock as security interest



Lists of small-company risk factors can be used to analyze the attributes of a specific subject company and to select the level of adjustment for size and unsystematic risk. It is important, however, to avoid a "double counting" since adjustments for size often implicitly include adjustments for other operating attributes.

Size Premium Choices

Ibbotson presents data segmented into the 10 deciles of the New York Stock Exchange, with each decile having the same number of companies. Ibbotson then adds similar-size companies from the American Stock Exchange and the NASDAQ. Within the empirical data, there are several possible market segment choices to draw from to adjust for size. Two choices are:

1. *Ibbotson micro-cap size premium.* This is a measure of the extra returns on the public companies making up the ninth and tenth deciles of the market with a mean average market capitalization of $68.3 million. Some analysts favor using this benchmark due to the significant breadth of the market covered by this combined strata (2,796 companies in the most recent year).

2. *Tenth decile of the Ibbotson studies.* This benchmark size premium exhibits the additional returns enjoyed historically by companies making up the smallest tenth of the public market. The most recent year of data includes approximately 1,900 companies. These entities range roughly between $1.5 and $84 million in market capitalization, with a mean average of $38.6 million.

A significant gap still exists in the market value of these public companies and many of the smaller closely held companies that analysts value. In response, Ibbotson has further broken down the tenth decile by size in the *2001 SBBI Valuation Edition.*[15] The entries in the 10A strata range in market capitalization from $1.5 million to $48 million; 10B strata companies range between $48 million and $84 million.

The 10B group of publicly traded stocks exhibit a size premium that is more than double the size of the 10A strata. Besides a smaller sample size, other issues that can create less reliable small-stock premia data include the:

- Impact of transaction costs on small stocks in relation to the value of the underlying shares
- Biases due to infrequent trading of small-company shares and the impact on their betas
- Larger bid-ask spread
- "Delisting bias" found in the lower segment of the public markets

Beta Criteria

Once a choice is made between these differing benchmarks, the analyst also must determine what set of criteria is appropriate to use. The Ibbotson size premia are all derived by reference to the CAPM model. The various charts provided in the *SBBI* book use different measures of beta coefficients to make the underlying calculations. The analyst must choose between the different sets.

The chart in Exhibit 5.8 (used with permission) illustrates the choices analysts can make in selecting a size premium. All of the following premia are based on returns in excess of CAPM.

Exhibit 5.8 Equity Size Premiums (%) (2001)

		Deciles		
Category	**Micro-Cap***	**10**	**10A**	**10B**
S&P 500 (Monthly Beta)	2.62	4.63	2.78	8.42
NYSE (Monthly Beta)	3.01	5.01	N/A	N/A
S&P 500 (Sum Beta)	0.78	2.32	N/A	N/A
S&P 500 (Annual Beta)	1.12	2.54	N/A	N/A
* 9th & 10th Deciles				

[15] Ibbotson Associates, Inc., *Stocks, Bonds, Bills and Inflation, 2001 Yearbook,* Valuation Edition, 225 North Michigan Avenue, Suite 700, Chicago, IL 60601-7676, (312) 616-1620, p. 122. Used with permission. All rights reserved.

The range is quite large, 0.78 to 8.42 percent. Some analysts prefer using micro-cap premiums since there is a larger number of companies in the sample size. However, this premium data includes larger companies, diminishing the impact of size. Many analysts use the S&P 500 (Monthly Beta) tenth decile risk premium of 4.63 percent. This premium has become more meaningful since Ibbotson increased the number of companies from 185 companies in 1999 to 1,927 companies with the publication of their 2000 data.

Company-Specific Risk Premium

The final component of the discount rate is the risk specific to the company being valued and/or the industry in which it operates. This is one of the most subjective areas of business valuation. Company-specific risk includes risk associated with the particular industry in which the subject company operates in relation to the economy as a whole as well as the risks associated with the internal workings of the subject company, including such things as management, leverage, and dependence on specific suppliers and customers.

Using the New Ibbotson Industry Premia to Quantify Company-Specific Risk

The Ibbotson industry premia draw on empirically supported studies of the risk associated with specific industries using a concept called full-information betas. Full-information betas calculate a weighted average beta for an industry segment by segregating the proportion of each publicly traded enterprise within a specific industry based on gross revenues. The result is an indication of the beta coefficient for an industry as a whole in relation to an overall market beta of 1.0.

The 2000 edition of *SBBI* lists estimates of industry premia for over 60 general SIC codes. These estimates are shown as percentage adjustments ranging from –12.59 to +7.41 percent. The 2001 edition of *SBBI* expands this industry risk information to almost 300 SIC codes with an indication of premia ranging from –7.75 to +8.57 percent. Conceptually, the emergence of this new empirically supported data means that the traditional model utilized to develop rates can be adjusted in certain situations:

Traditional Application of the Build-up Approach

	Risk-free rate
+	Equity risk premium
+	Size premium
+	Specific company risk
=	Cost of capital discount rate

Application of the Build-up Approach Using Ibbotson Industry Risk Premia

	Risk-free rate
+	Equity risk premium
+	Size premium
+/−	Industry risk premium
+	Specific company risk
=	Cost of capital discount rate

This new framework is another step toward closing the gap between risk factors that can be empirically justified and those that must be selected based on subjective judgment. Since the industry risk premia provided is still quite limited in terms of the number of companies per industry, the number of industries represented, and the broad definitions of industry categories, the selection of appropriate adjustments for industry risk will continue to be subjective and the data points available in these new studies will rarely, if ever, be an exact match to the subject company. Therefore, the analyst still will need to evaluate industry-related factors not captured by this new premia information. Nonetheless, these new data should assist practitioners in certain assignments where a strong relationship between available industry data and the subject entity can be made.

For purposes of assessing enterprise risk, an argument can also be made to focus on strategic groups of business interests, as opposed to industry concentrations alone. This is a major thrust of the work of Michael Porter's research. Overly simplified, the underlying theory with this concept is that the profitability of many business enterprises will be subject more to the economic impacts and performance of those enterprises within their strategic group, than those that simply operate within their same industry. The relevant strategic group often encompasses those customers and supplies who are aligned vertically with the business, as opposed to competitors on the horizontal plane.

ValTip

While the amount of industry risk premia data available from Ibbotson Associates is expected to grow over time, many analysts in the valuation community are not yet comfortable with the direct application of industry risk premia adjustments. However, analysts can consider this new empirical evidence where the subject falls within one of the Ibbotson-defined industries and there is a need to assess industry risk that may not be captured in the build-up method.

METHODS TO ARTICULATE UNSYSTEMATIC RISK

Frank C. Evans, president of American Business Appraisers, made a presentation at an August 1999 ASA conference that covered the use of a matrix to detail adjustments for company-specific risk factors. An example of this matrix concept was published in the "How Do You Handle It?" column of the September 1999 *Business Valuation Review* newsletter, shown in Exhibit 5.9.

The above sample chart displays a couple of interesting aspects. First, it is worth noting that the factors outlined in this analysis are similar to the size factors listed by Tarbell, as discussed in the size premia adjustment section earlier in this chapter. Second, the sample lists a couple of positive attributes, which can reduce the adjustment to the discount rate for operating attributes that reduce risk.

Exhibit 5.9 Specific Company Risk Factors

		Incremental Risk (Ex. only)
Specific Company Risk Factors for XYZ Corporation		
1.	Operating history, volatility of revenues and earnings	3.5
2.	Lack of management depth	1.0
3.	Lack of access to capital resources	0.5
4.	Over reliance on key persons	1.0
5.	Lack of size and geographic diversification	0.5
6.	Lack of customer diversification	0.0
7.	Lack of marketing resources in light of competition	0.5
8.	Lack of purchasing power and other economies of scale	0.0
9.	Lack of product and market development resources	0.5
10.	Over reliance on vendors/suppliers	0.0
11.	Limitations on distribution system	0.0
12.	Limitations on financial reporting and controls	0.5
Positive Attributes		
1.	Long term contracts with customers or unique product or market niche	0.0
2.	Patents, copyrights, franchise rights, proprietary products	(1.0)
Net increase to discount rate		7.0

ValTip

Analysts must use caution when working with a methodology that assigns specific numerical adjustments to the build-up or CAPM rate. Due to the subjective nature of the numerical assignments for each category, the analyst may be asked if it is reasonable for each of the factors to be, say, a half percent higher or lower, thereby in summation causing a significant change in the resulting capitalization or discount rate being developed. These numerical adjustments are not as exact as they appear. Also, these lists may not be all inclusive.

Exhibit 5.10 is another example of a format that can be utilized to assist in the measurement of unsystematic risks of an enterprise. It must be emphasized, however, that the use of such tools is subjective in nature without a direct formula or correlation table to quantify the required adjustment to capture the additional returns required for such risks. In the following example, the first item within each category has a sample of what might be included within the context of a specific assignment.

Such an analytical framework is only a diagnostic tool to assist the practitioner in the exercise of professional judgment. No formulas, guidelines, or rules of thumb can be relied on consistently to derive indications of unsystematic risk for a specific enterprise.

Exhibit 5.10 Unsystematic Risk Analysis for a Professional Law Practice—Business Characteristics and Risk Factors: Summary

Risk Ratings can be "High," Medium," and "Low" and are subjective assessments of factors in the professional practice being valued. A numeric scale may also be used, although it is important to emphasize that the results of such an approach cannot be converted directly into a final measure of unsystematic risk.

Risk

I. Practice Makeup

1. Range of Services Provided: HIGH
   The practice is not well diversified since it focuses entirely on bankruptcy. Its limited focus not only prevents it from meeting the needs of a broad range of clientele, but also hinders its ability to respond to changing external conditions.
2. Years in Business:
3. Stability, change:
4. Key Personnel Dependence:
5. Staff Stability:
6. Availability of New Staff:
7. Relative Size of Practice:
8. Ease of Competitive Entry:
9. Client Loyalty and Dependency:
10. Office and Equipment:
11. Name Recognition of Firm
12. Reputation of Professionals:
12. Marketing Methods/Strengths:
13. Location:
14. Growth Potential:

II. Financial Risk: Current Status and Historical Trends

1. Current and Quick Ratios: LOW
   A current ratio analysis of the enterprise over the past three years, shows the following:

	12/31/x1	12/31/x2	12/31/x3
Current Ratio	2.55×	2.32×	2.88×

   The current ratio of the enterprise has remained stable over the period analyzed, based on normalized figures. Roughly 90% of the current asset base included in the ratio consists of accounts receivables due from clients. Only the current portion of such receivables (less than 120 days outstanding) have been included in the calculations and the practice appears to have adequate internal controls in place to monitor and address billing and collections. The ratios compare favorably with industry statistics.
2. Profitability Ratios:
3. Realization Ratios:

(continues)

Exhibit 5.10 *continued*

		Risk
4.	Utilization Ratios:	
5.	Debt/Worth Ratio:	
6.	Books/Records, Quality, History:	
7.	Historical Trends:	
III.	**Management**	LOW
1.	Management Experience: The practice is managed by a traditional law firm model, consisting of a managing partner, executive committee, department heads and a qualified legal administrator. During the period ended, 12/31/xx, the firm changed its appointment process to allow for the managing partner to serve for successive periods as opposed to an annual change in this leadership position. The current managing partner is well skilled in management concepts and dedicates a significant portion of her time to the day-to-day management needs of the enterprise. The executive committee was also revamped to allow appointments of the six spots on a basis of three year terms with two individuals being appointed each year, occurring at the firm's annual owner's retreat. Department heads are appointed by the owner and most have been with the firm for a number of years. The legal administrator, who holds the CLM designation from the Association of Legal Administrators, is a CPA with significant experience in law firm operations.	
2.	Depth of Management:	
3.	Business Plan: Status:	
4.	Management Philosophy and Systems:	
5.	Succession Plans and Systems:	

ValTip

The format and content of an analytical framework for analyzing unsystematic risk will vary considerably depending on the nature of the assignment and the depth of analysis required. However, the articulation of the analysts' thought process by use of diagnostic tools can be a means of competitive differentiation, whether the tools are included in the final report or only in engagement work papers.

Another useful perspective or framework for analyzing unsystematic risk is incorporated within the work of Warren Miller in his seven-part series of articles on unsystematic risk which are being published by the AICPA's *CPAExpert* newsletter. Exhibits 5.11 to 5.13, taken with permission from Mr. Miller's work, help to convey some of the key aspects that an analyst should consider in conjunction with an assessment and quantification of these risks.

Exhibit 5.11 Analyzing Unsystematic Risk 1

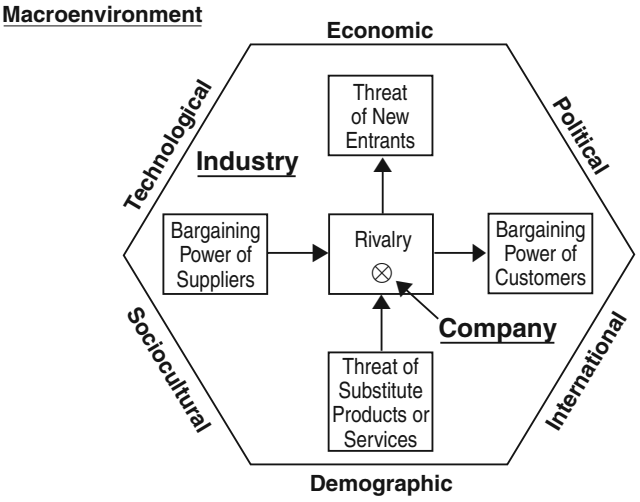


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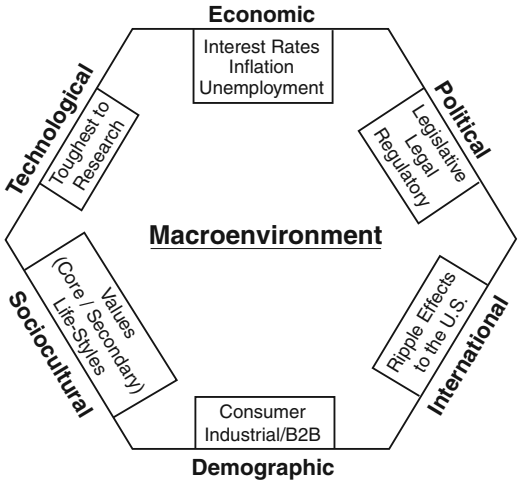
Exhibit 5.12 Analyzing Unsystematic Risk 2



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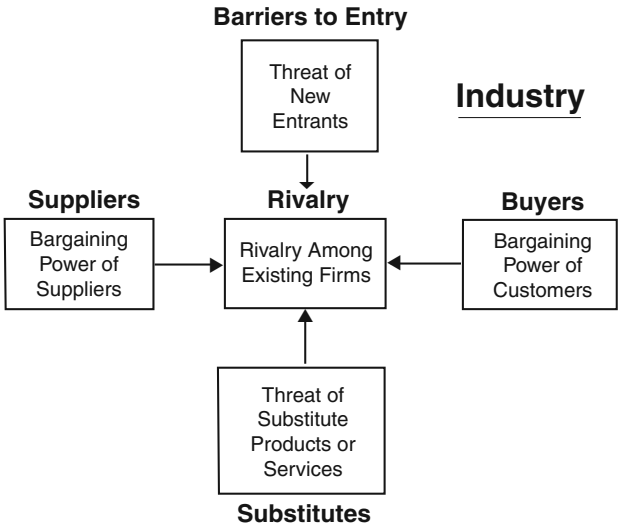
Adapted from *Microenvironmental Analysis for Strategic Management* by Liam Fahey and V.K. Naraganan (St. Paul: West Publishing Company, 1986), p. 29, and *Strategic Management: Competitiveness and Globalization* (3rd Ed.) by Michael A. Hitt, R. Duane Ireland, and Robert E. Hoskisson (Cincinnati: South Western Publishing Company, 1999), pp. 50–60. Also *Competitive Strategy: Techniques for Analyzing Industries and Competitors* by Michael E. Porter (New York: The Free Press, 1998).

Exhibit 5.13 Analyzing Unsystematic Risk 3



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Source: *Competitve Strategy: Techniques for Analyzing Industries and Competitors* by Michael E. Porter (New York: The Free Press, 1998).

OTHER ISSUES

Selection of Reporting Period for Ibbotson Data

Ibbotson reports risk premiums based on averages from any reporting period since 1926. Most analysts use the data based on this period of time. However, studies of more recent time periods suggest that size premia may not be as evident in the public marketplace as the longer period data implies. For example, the average risk premium for micro-cap stocks from 1990 to 2000 was –0.7 percent, indicating small companies were less risky over that time period. If you go back to 1980 and 1970, the average risk premium for those periods to 2000 is –2.8 and – 0.5 percent, respectively. However, certain years from 1970 to 2000 result in a positive average risk premium: 1971 to 1977, 1991, and 1992. Furthermore, there was a positive average risk premium every year (to 2000) from 1926 to 1967.

It will be interesting to observe the calculated values for the size premium for large versus small stocks over the next few years; many smaller companies that do not have the staying power of many of the larger public companies may show stress and a return to long-term historical trends. As discussed, we agree with Ibbotson Associates that the long-term view is appropriate and that an adjustment for size may be warranted in most situations when the valuation target is a small closely held enterprise.

After-Tax Cash Flow

Once the build-up rate has been completed, it is important to understand what type of rate the result represents. It is well recognized that the rate is an after-entity-level

tax rate, meaning that the major components of the rate (Ibbotson) are derived from publicly traded companies' cash flows after allowing for entity-level taxes. It is also commonly accepted that the rate derived under this method is a cash flow rate, meaning that it is based on empirical data from studies of cash flow returns of the public markets as opposed to reported earnings or some other measure of economic benefit stream. The definition of cash flows for this purpose includes not only reported dividends but increases in share values, since such capital appreciation represents accessible cash to the shareholders because they can liquidate their holdings at any moment in time.

Minority or Control

Another contentious issue is whether the resultant rate represents a minority or controlling interest return. Given that the underlying data used by Ibbotson in its empirical studies represents minority interest returns in publicly traded companies, many analysts have concluded that the resulting rates derived from the use of this method already incorporate the attributes of minority ownership. Ibbotson, however, argues that the rates derived from its data are neutral and incorporate neither control nor minority characteristics. The rationale is that most publicly traded companies optimize shareholder returns as a key corporate strategy and that the arrival of a new controlling owner would not be able to improve such returns unless that owner were a strategic buyer (which, then, shifts the standard of value away from FMV). There is no proof that such a control position could improve the shareholder returns. This issue was further discussed in an article by Eric Vander Linden in the December 1998 *Business Valuation Review* quarterly newsletter, titled "Cost of Capital Derived from Ibbotson Data Equals Minority Value?" Mr. Vander Linden concludes, after reference to several other recognized sources, that adjustments for control versus minority attributes are done through the numerator (cash flow) and not the denominator (rate of return). This view is also presented by the American Institute of Certified Public Accountants and the American Society of Appraisers in their business valuation courses.

CAPITAL ASSET PRICING MODEL METHOD

History of CAPM

In 1952 economist Harry Markowitz developed the modern portfolio theory, which presented the efficient frontier of optimal investment. Markowitz promoted a diversified portfolio to reduce risk. However, it was not until the 1960s that the research of William Sharpe was used to develop a means by which to measure this risk.

William Sharpe, a student at the University of California, was searching for a topic for his dissertation. He took the initiative to speak with Markowitz about his earlier work. Markowitz suggested that he explore the portfolio theory.

Sharpe studied the theory and modified it by connecting each portfolio with a single risk factor. He placed these risks into two categories, systematic risk and unsystematic risk. Systematic risk, referred to as beta, is the risk of being in the market. This type of risk cannot be diversified. Once you enter the market, you take on this risk. Unsystematic risk is risk that is specific to each individual company. Sharpe concluded that by diversifying one's portfolio, one could reduce or eliminate unsys-

tematic risk. Therefore, the return of the portfolio would rest entirely on its correlation to the market.

Together, Markowitz and Sharpe received the Nobel Prize in 1990 for their work on this model, which presented a standardized measure for the risk of an asset with respect to the market.

Capital Asset Pricing Model

The CAPM is derived from the capital markets. It attempts to provide a measure of market relationships based on the theory of expected returns *if* investors behave in the manner prescribed by portfolio theory.

Risk, in the context of this application, is defined conceptually as the degree of uncertainty as to the realization of expected future returns and, as previously discussed, can be divided into three segments, maturity risk, systematic risk and unsystematic risk. As discussed earlier, the capital market divides risk beyond simple maturity risks into two types:

1. *Systematic Risk*. The uncertainty of future returns due to the sensitivity of the return on the subject investment to movements in the return for the investment market as a whole.
2. *Unsystematic Risk*. The uncertainty of future returns as a function of the characteristics of the industry, enterprise and type of investment interest. Examples of circumstances that can impact unsystematic risk include operating in an industry subject to high obsolescence (e.g., technology), management expertise, labor relations, and the like. Also refer to the detailed discussion earlier in this chapter on types of unsystematic risks and the methods to evaluate them.

The CAPM model is based solely on quantifying systematic risk because it assumes that prudent investors will eliminate unsystematic risk by holding large, well-diversified portfolios. The unsystematic risk attaching to a particular company's stock is eliminated through diversification. The capital asset theory is then extended out in the Modified Capital Asset Pricing Model (MCAPM) to capture unsystematic risk through adjustment for size effects and the specific company risk in order to derive a rate applicable to a specific valuation target.

The traditional formula for CAPM is:

$$E(R_i) = R_F + B(RP_m)$$

Note: See definitions of variables below.

However, valuation analysts have modified this formula for application to smaller companies by including size and unsystematic/specific company risk. R_f , B, and RP_m are the same for both CAPM and MCAPM. (The only difference between the build-up method and CAPM is the addition of beta.)

Modified Capital Asset Pricing Model

The basic formula for MCAPM is expressed as follows:

$$E(R_i) = R_F + B(RP_m) + RP_s + RP_u$$

Where:

$E(R_1)$ = Expected (market required) rate of return on the security

R_f = Rate of return for a risk-free security as of the valuation date

B = Subject company's beta coefficient

RP_m = Equity risk premium for the "market"

RP_s = Risk premium for small size

RP_u = Risk premium for specific company, where u stands for unsystematic risk

Note: For detailed information on the components of MCAPM (other than beta) see the section in this chapter on the build-up method.

Understanding Betas

To measure systematic risk, the equity risk premium is adjusted by beta for the anticipated future return of the specific security and that of the market as a whole. It represents the overall risk of a company as it relates to investing in a large market, such as the Standard & Poor's 500 or the New York Stock Exchange. Each public company has a beta. The stock market as a whole is assigned a beta of 1.0. Betas measure the volatility of the excess return on those individual securities relative to that of the market as a whole. Securities with a beta more than 1.0 are considered more risky and those with betas less than 1.0 are more conservative investments with systematic risks lower than the market. Furthermore, a portfolio that has a beta of 0.5 will tend to participate in broad market moves, but only half as much as the market overall. A portfolio with a beta of 2.0 will tend to benefit or suffer from broad market moves twice as much as the market overall.

The formula for beta can be expressed as follows:

$$B = COV (R_s R_m) / VAR (R_m)$$

Where:

B = Subject company's beta coefficient

COV = Covariance of returns between the subject company (R_s) and the market (R_m)

VAR = Variance of the returns on the market

Published Sources of Betas

Published sources of beta information on publicly traded companies include Value Line Investment Survey,[16] Standard & Poor's Compustat and Stock Reports,[17] Merrill Lynch, Barra, Value Line, and CompuServe (GO BETA).[18]

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[16] Value Line Investment Survey, 220 East 42nd Street, 6th Floor, New York, NY 10017, (212) 907-1500.

[17] Standard & Poor's Corporation, 25 Broadway, New York, NY 10004, (212) 208-8000.

[18] CompuServe, 5000 Arlington Centre Blvd., P.O. Box 20212, Columbus, OH 43220.

ValTip

The betas published by the different sources can display different results due to differing time periods, methodologies, and adjustments. Therefore, the valuation analyst should be careful using betas from more than one source in any given valuation.

Another source for beta information is the Ibbotson semiannual Beta Book. Individual company betas for over 5,000 companies can be obtained directly from the Cost of Capital center at *www.Ibbotson.com*. Ibbotson beta information is updated regularly and includes the traditional ordinary least squares method calculation, three-factor Fama French calculated betas, and sum beta calculations.

A review of the beta for Bristol Myers Squibb Co. from various sources shows the differences that can occur (see Exhibit 5.14).

Exhibit 5.14 Beta Sources

	Market Proxy	Period and Frequency of Data	Adjustment Factors	Beta for Bristol Meyers Squibb Co.
Bloomberg	Over 20 domestic series	Adjustable, daily, weekly, monthly or annually	(0.66 × unadjusted beta) + (0.33 × 1.0)	1.05*
Compustat	S&P 500	5 years, monthly	None	1.198
Ibbotson	S&P 500	5 years, monthly	Adjusted toward peer group beta weighted by statistical significance	1.04
Merrill Lynch	S&P 500	5 years, monthly	0.33743 + 0.66257 × (unadjusted beta)	1.14
Value Line	NYSE Composite	5 years, weekly	0.35 + 0.67 × (unadjusted beta)	0.95

*using 60 months of monthly data and the S&P 500

Once the appropriate source of betas has been identified, the next step is to determine precisely what beta(s) should be used for a particular subject. This may be accomplished by analyzing the similarities between the subject and public companies to find entities that are sufficiently similar or by using an industry beta. In addition, the type of beta will need to be selected. The types include ordinary least squares betas (often referred to as the standard beta), a lagged or sum beta, and an adjusted beta. See the addendum at the end of this chapter for further details on types of betas.

Unlevering and Relevering Betas

Published betas for publicly traded companies reflect the actual capital structure of the related entity and are referred to as levered betas. Once an appropriate beta has been identified for application to a specific subject company, it can be adjusted for differences in capital structure between the companies supplying the beta and the subject. This process is complex and requires three steps:

1. The guideline companies betas are recalculated on an unlevered basis assuming a capital structure constructed of equity only.
2. The risk-adjusted unlevered beta is relevered based on the assumed capital structure for the subject entity.
3. The relevered beta is used in the MCAPM.

The formula for unlevering a beta is:

$$Bu = Bl / [1 + (1 - t)(Wd / We)]$$

Where:

Bu = Beta unlevered

Bl = Beta levered

t = Tax rate for the company

Wd = Percentage of debt in the capital structure (at market value)

We = Percentage of equity in the capital structure (at market value)

Example: Assume for guideline company A:

- Published levered beta: 1.4
- Tax rate: 40 percent
- Market value capital structure: 35 percent debt, 65 percent equity

$$\begin{aligned} Bu &= 1.4 / [1 + (1 - .40)(.35 / .65)] \\ &= 1.4 / 1 + .60(.538) \\ &= 1.4 / 1.323 \\ &= 1.06 \end{aligned}$$

The formula for relevering a beta is:

$$Bl = Bu [1 + (1 - t)(Wd / We)]$$

Where the definitions of the variables are the same as in the formula for computing unlevered betas.

Example: Using the unlevered beta decided above, let us assume that the subject company decided to operate with only 20 percent debt and:

- Unlevered beta from above: 1.06
- Tax rate: 40 percent
- Market value capital structure: 20 percent debt, 80 percent equity

$$
\begin{aligned}
Bl &= 1.06[1 + (1 - .40)(.20 /.80)] \\
&= 1.06[1 + (.60)(.25)] \\
&= 1.06[1 + .15] \\
&= (1.06)(1.15) \\
&= 1.22
\end{aligned}
$$

DEVELOPMENT OF THE WEIGHTED AVERAGE COST OF CAPITAL

To compute a proper cost of capital, it is common first to examine the capital structure of the business entity being valued. Three types of capital form the capital structure of most business entities:

1. Common equity
2. Preferred equity
3. Long-term debt

Each of these components has a cost associated with it. The definition of the Weighted Average Cost of Capital (WACC) is the blended cost of the company's capital structure components, each weighted by the market value of that capital component.[19] The use of a WACC method to determine value can be appropriate when the objective is to value the entire capital structure of the enterprise or invested capital, such as in an acquisition where the buyer believes the current capital structure may not be optimal or where they intend to change it. In this situation, a WACC can be developed for several capital structure scenarios (more debt, less debt, debt of different types with different rates, etc.) as a way for the buyer to try out different approaches to enterprise financing.

Steps for Calculating the Weighted Average Cost of Capital

A company's WACC is calculated in three steps:

1. Determine the proportionate weighting of each source of capital financing based on their market values.
2. Calculate the after-tax rate of return (cost) of each source.
3. Calculate the weighted average cost of all sources.

The traditional formula used to develop a WACC is:

$$WACC = (k_e \times W_e) + (k_p \times W_p) + (k_{d/(pt)}\,[1 - t] \times W_d)$$

[19] Reilly, Robert F. and Robert P. Schweihs, *The Handbook of Advanced Business Valuation* (New York: McGraw-Hill, Inc., 2000).

Where:

WACC	=	Weighted average cost of capital
k_e	=	Cost of common equity capital
W_e	=	Percentage of common equity in the capital structure, at market value
k_p	=	Cost of preferred equity
W_p	=	Percentage of preferred equity in the capital structure, at market value
$k_{d/(pt)}$	=	Cost of debt(pretax)
t	=	Tax rate
W_d	=	Percentage of debt in the capital structure, at market value

This same WACC formula can be conveyed in a tabular format. See the example in Exhibit 5.15.

Exhibit 5.15 Example of WACC Formula in Tabular Format

Capital Component	% Component in Capital Structure[a]	Cost		Weighted Cost of Capital Component
Debt	.40	.08 − .032[b]	=	.019
Preferred Equity	.15	.10	=	.015
Common Equity	.45	.18	=	.081
	1.00			
	Weighted average cost of capital		=	.115
			=	11.5%

[a] at market rates
[b] assuming a 40% tax rate

The difficulty arises when a WACC needs to be developed for a privately held company. Since no market exists for a private company's securities, market values must be estimated to assign weights to the capital structure components. To do this, the analyst may start with an initial estimate for capital structure weightings and plug these weights and accompanying estimated costs of capital into the WACC formula. Using this initial WACC to calculate the market value of total invested capital and subtracting the value of debt gives the first estimation of the market value of equity and a second (desired) capital structure. This iterative process can be repeated until a reasonable WACC and accompanying capital structure are derived. This process is greatly simplified by use of electronic spreadsheets. Proxy capital structures from public company data also can be useful in determining the weight of debt and equity.

Cost of Debt

The actual rate a business entity pays on interest-bearing debt is the pretax cost of debt, assuming the enterprise is borrowing at market rates. When there is long-term debt involved, the rates being paid may differ from the prevailing market, due to changes in required yields on debt of comparable risk because of changes in market influences. Current available rates should be checked against the company's actual rate.

Since the interest paid on debt instruments is tax deductible, the cost to the enterprise is derived by multiplying the market value of the subject debt times 1 minus the entity's tax rate. The after-tax cost to the enterprise represents its effective rate, possibly subject to adjustments for other costs as detailed below.

Examples of hidden costs include:

- Loan origination fees
- Loan covenants, such as the need to maintain compensating balances or certain financial ratios, such as a current ratio requirement
- Guarantees or pledges of collateral
- Fees for unused lines of credit (e.g., some banks charge a small percentage fee for amounts available but not utilized on available borrowings)

These additional costs can be considered when assessing the true cost of debt financing, especially in situations where these costs are significant relative to the principal. This may be the case with many smaller companies. The analyst can factor these costs into the calculation of the true cost of debt capital when appropriate.

Minority versus Control Considerations When Developing a Weighted Average Cost of Capital

When valuing a minority interest, it is often appropriate to use the actual capital structure of the enterprise for the weighting of the WACC components because a minority owner is not able to bring about any changes in the company's capital structure.

When valuing a controlling interest, an argument can be made for using an industry-based capital structure, under the premise that a control buyer normally will attempt to optimize the capital structure of the enterprise. The overall capital structure exhibited by companies operating within the same industry as, and demonstrating similarity to, the subject can serve as a reasonable proxy for the subject's optimal capital structure. If the control owners of the business intend to operate at a different capital structure, then the WACC based on that structure may be appropriate.

A good source of information for determining industry capital structures can be found in the Ibbotson Associates *Cost of Capital* publications. If the guideline public company method is being used, the public companies can be a source of capital structure components.

PRICE/EARNINGS METHOD

Relationship Among Cap Rates, Discount Rates, and the Price/Earnings Multiple

A true and mathematical relationship exists between the earnings capitalization rate and the price/earnings (P/E) multiple.

ValTip

> Since traditionally derived discount and capitalization rates are cash flow rates, and not earnings rates, an upward subjective adjustment would typically have to be made to convert the rate.

The direct relationship between the P/E multiple and the earnings capitalization rate equals the difference between the discount rate (risk) and long-term sustainable growth. This relationship can be presently mathematically as shown in Exhibits 5.16 to 5.18.

Exhibit 5.16 Relationship Between the P/E Multiple and the Earnings Cap Rate

We know that,

$$\frac{P}{E} = \frac{\text{Price per Share}}{\text{Net Earnings Per Share}} \quad \text{OR} \quad \frac{\text{Total Equity Value}}{\text{Total Net Earnings}}$$

We also know that, Total Equity Value $= \dfrac{\text{Total Net Earnings}}{\text{Earnings Capitalization Rate}}$

Therefore, Earnings Capitalization Rate

$$\frac{P}{E} = \frac{\text{Total Equity Value}}{\text{Total Net Earnings}} = \frac{\dfrac{\text{Total Net Earnings}}{\text{Earnings Capitalization Rate}}}{\dfrac{\text{Total Net Earnings}}{1}}$$

Then,

$$\frac{P}{E} = \frac{\dfrac{\text{Total Net Earnings}}{\text{Earnings Capitalization Rate}}}{\dfrac{\text{Total Net Earnings}}{1}} = \frac{\cancel{\text{Total Net Earnings}}}{\text{Earnings Capitalization Rate}} \times \frac{1}{\cancel{\text{Total Net Earnings}}}$$

Exhibit 5.17 Relationship between the Earnings Cap Rate and the Discount Rate

We also know that:

Capitalization Rate = Discount Rate − Long-Term Sustainable Growth Rate

Therefore,

$$\frac{P}{E} = \frac{1}{\text{Capitalization Rate}} = \frac{1}{R_k - g}$$

Where,

R_k = Discount Rate associated with the particular income stream or earnings
g = Long-term sustainable growth rate

or

$$\frac{P}{E} = \frac{1}{\text{Earnings Capitalization Rate}}$$

Exhibits 5.18 Components of Both Risk and Growth

$$\frac{P}{E} = \frac{1}{\text{Components of } R_k - \text{Components of g}}$$

	Adjusted Long-Term (In perpetuity) Rate
Riskless Rate	Inflation growth rate
+ Equity risk premia	+ Real growth rate
+ Small stock size risk premia	
+ Unsystematic / Specific Company Risk	
+ Adjustment to convert from cash flow rate to an earnings rate	

Market-Derived Price/Earnings Multiples

Overview

Understanding how market-derived P/E multiples interplay with risk and growth is important to making appropriate "adjustments" that reflect the risk and growth of a closely held company being valued. Using market multiple(s)[20] can be important for a number of reasons:

- Many analysts believe the public market for securities has an impact on the value of a closely held company's stock.

[20] In addition to P/E multiples, multiples to EBIT, EBITDA, tangible assets, etc. apply as well.

- Actual market transactions represent compelling empirical evidence of fair market value. There are literally thousands and thousands of "very informed and scrutinized"[21] market transactions daily that are at arm's length and therefore could very well be the best proxy for the definition of the willing buyer and seller.
- Revenue Ruling 59-60 states that the valuation specialist should consider "the market price of stocks of corporations engaged in the same or a similar line of business having their stock actively traded in a free and open market, either on an exchange or over-the-counter."
- The U.S. Federal Tax Court has based decisions on the guideline public company method.

ADJUSTMENTS TO THE PRICE/EARNINGS RATIO

Public Company Adjustments

Adjustments for extraordinary items, nonrecurring items and income tax of publicly traded companies may be required in addition to adjustments that are specific to the closely held company that is being valued. Accordingly, there are two "baskets" of adjustments, one to calculate the multiple itself and one to adjust for specific company factors. See Chapter 6 for more information on calculating multiples.

ValTip

It is important to recognize the increasingly "noisy" nature of public company–reported valuation multiples including P/E. As indicated in the August 21, 2001 *The Wall Street Journal,*[22] many public companies have moved away from using GAAP earnings for the E of the P/E to utilize other earnings measures, such as "operating" earnings before extraordinary items, "core" earnings, and even "pro forma" earnings. Each of these revised definitions of earnings allows reporting entities to exclude certain one-time, exceptional, special, or noncash expenses; in turn, the net income of the enterprise is higher. According to the article, more than 300 of the 500 entities making up the S&P 500 now exclude some ordinary expenses as defined by GAAP from the operating earnings numbers provided to investors and analysts.

[21] The Security and Exchange Commission scrutinizes market transactions as well as ensuring timely and accurate reporting information.

[22] Weil, Jonathan, "What's the P/E Ratio? Well, Depends on What Is Meant by Earnings," *The Wall Street Journal* (August 21, 2001).

Company-Specific Adjustments

Determining the earnings capitalization rate of a publicly held company should be straightforward. However, potential problems in applying that capitalization rate/multiple exist when the company being valued is different in size, anticipated growth, and other specific risk factors. Certain adjustments may be warranted.

Growth and Size Factors

The growth rates and size of the closely held company are material components of price multiple adjustments. In general, typically downward adjustments are made, resulting in lower price multiples applied to private companies. Public market data observations since 1926 show that smaller companies are generally riskier and therefore require a higher rate of return. In other words, smaller companies sell at lower price multiples. This relationship between size and price multiples has been demonstrated in various studies.

Jerry O. Peters, who found that when analyzing ratios published by *Mergerstat Review*, the price paid for "a dollar of earnings varies directly with the total market value of the company. For example, the median price/earnings ratio paid for all companies valued at less than $25 million has averaged 25.9 percent less than that paid for companies valued at $100 million or more over the last five years."[23] Since those transactions were predominately controlling interests, Peters also looked at publicly traded minority interests and found similar results: "According to my analysis, the median price/earnings ratio for a minority interest in companies valued at less than $25 million has generally been 30 percent less than the median price/earnings ratio for companies valued at $100 million or more."

Peters also quoted the IRS's own research on this:

> There may be some question as to why the value of a company per dollar of earnings should increase in proportion to corporate size. This tendency seems to be quite logical, however, in view of the practical considerations which most investors follow when making their buy and sell decisions. For one thing, the most successful companies gradually become the largest companies and in many cases become the leaders in their particular industry. Their very success and consequent size is ample evidence to the investing public that each of these enterprises has the ability to grow either from internal expansion of its plants and products or by means of mergers. High quality management is ordinarily a prime requisite in such firms and, with such, the investing public is likely to place a greater confidence in these corporations. Certainly, the securities of such corporations are better known to the public and, by the same fact, become more marketable. Any of these reasons could account for the greater interest, popularity, and consequent higher ratio of price to earnings. Regardless of the underlying causes, however, it is apparent that a genuine and easily discernible trend exists with respect to the size of the corporate enterprise and the price-earnings ratio, which it displays.

[23] Peters, Jerry O., "Adjusting Price/Earnings Ratios for Differences in Company Size," *Business Valuation Review* (March 1992), p. 3.

Peters has since updated his study with similar results. In his September 1995 article in *Business Valuation Review*, the percentages changed from 25.9 to 27.1 percent and 30 to 25.8 percent for the controlling and minority interests respectively.

Size and Company-Specific Risk Adjustments

Example: Assume that the discount rate component of the cap rate must be increased by two points for size and two points for company-specific risk (thin management, limited markets, etc.). Keep in mind that industry risk is already included in the guideline multiple.

1. Convert observed guideline company's pricing multiples to earnings cap rates.

   P/E = Price/net earnings
   IC = Invested capital
   EBIT = Earnings before interest and taxes

Valuation Multiple	Observed Pricing Multiple	Conversion to Capitalization Rate	Capitalization Rate
P/E	15.1	1/15.1	6.6%
IC to EBIT	8.7	1/8.7	11.5%

2. Increase earnings cap rates by the excess expected increase in risk.

Valuation Multiple	Capitalization Rate	Excess Risk	Adjusted Capitalization Rate
P/E	6.6%	4.0%	10.6%
IC to EBIT	11.5%	4.0%	15.5%

3. Convert adjusted earnings cap rates to pricing multiples.

Valuation Ratio	Adjusted Capitalization Rate	Conversion to Pricing Multiple	Adjusted Pricing Multiple
P/E	10.6%	1/.106	9.4
IC to EBIT	15.5%	1/.155	6.5

See Chapter 6 for further information on adjusting multiples for application to closely held companies.

ARBITRAGE PRICING THEORY

While CAPM only recognizes systematic risk relative to a market index, Arbitrage Pricing Theory (APT) extends the concept of CAPM through the recognition of a series of risk factors, with just one of these factors being systematic, or "market timing," risk.

The initial model for APT was developed by Stephen Ross to estimate and monitor the risk of an asset allocation strategy or to estimate the likely response of a portfolio to economic developments. The APT model for predicting the behavior and performance of a financial instrument or portfolio is based on the proposition that if the returns of a portfolio of assets can be quantified and described by a fac-

tor-based structure or model, the expected return of each asset in the portfolio can be described by a linear combination of the factors of the returns of the assets within the portfolio group. The resulting factor model can be used to create portfolios that track a market index, to estimate and monitor the risk of an asset allocation strategy, or to estimate the likely response of a portfolio to economic developments.

The APT model formula is:

$$E(R_i) = R_f + (B_{/1}K_{/1}) + (B_{/2}K_{/2}) + \ldots + (B_{/n}K_{/n})$$

Where:

$E(R_i)$	=	Expected rate of return on the subject security
R_f	=	Rate of return on a risk-free security
$K_{/1}$ $K_{/n}$	=	Risk premium associated with factor K for the average asset in the market (general macroeconomic factors, i.e., changes in investor confidence, inflation, etc.)
$B_{/1}$ $B_{/n}$	=	Sensitivity of the security i to each risk factor relative to the market average sensitivity to that factor

The general risk factors considered in building a rate through APT, in addition to systematic or market risk, include[24]:

- *Confidence Risk*. The unanticipated changes in investor's willingness to undertake relatively risky investments. It is measured as the difference between the rate of return on relatively risky corporate bonds and the rate of return on government bonds, both with 20-year maturities.
- *Time Horizon Risk*. The unanticipated changes in investors' desired time to payout. It is measured as the difference between the return on 20-year government bonds and 30-day Treasury bills.
- *Inflation Risk*. A combination of the unexpected components of short- and long-run inflation rates.
- *Business Cycle Risk*. Represents unanticipated changes in the level of real business activity. This component measures whether economic cycles are in the upswing or downswing with each, respectively, adding a positive or negative adjustment to the overall required rate of return.

ValTip

APT theory is not widely used in business valuation assignments for cost of capital determinations due to the unavailability of usable data for the components of the model.

[24] Based on a presentation by Edwin Burmeister, Richard Roll, and Stephen A. Ross and in an exhibit prepared by Burmeister, "Controlling Risks Using Arbitrage Pricing Techniques."

BUILD-UP SUMMATION MODEL

Another method to derive capitalization and discount rates has recently emerged based on a model introduced in 1991 by Parnell Black and Robert Green, the founders of the National Association of Certified Valuation Analysts (NACVA). Known for years as the Black-Green Method, the underlying model recently has been revised and expanded by J. Richard Claywell and William A. Hanlin, Jr., in a NACVA course book titled *Capitalization and Discount Rates: The Value of Risk*. This approach uses a series of factors taken from four basic categories to rate various operating attributes of the subject entity:

1. Competition
2. Financial Strength
3. Management Ability and Depth
4. Profitability and Stability of Earnings

Significant emphasis is placed on a detailed financial analysis of the subject enterprise, including financial ratios and comparisons to historical trends and industry benchmarks.

Once the subject has been analyzed using these categories and a series of factors has been developed, weights are assigned based on professional judgment. This weighting process leads to the selection of a rate adjustment for each category. Both the original model and the revised work by Claywell and Hanlin provide a suggested range of the rate adjustments (0 to 10 percent) for each category, for a maximum total rate of 40 percent. The selection of the build-up percentages is based on the analysts' determination of whether each factor within a category adds no risk (+0.0 percent), low risk (+1.0 percent), medium-low risk (+2.5 percent), medium risk (+5.0 percent), medium-high risk (+7.5 percent) or high risk (+10.0 percent) to that category. The risk adjustments for the four categories then are summed together, and additional adjustments are considered for environmental and national and local economic considerations. The final sum is the rate of return for the subject company.

ValTip

There has been much debate over the merits of the Black-Green model. Many analysts have determined that the method is not empirically grounded and can be misleading with regard to the suggested ranges of rate adjustments for each category. However, the detailed list of questions for the various factors can be very useful as an analytical tool and for work paper support.

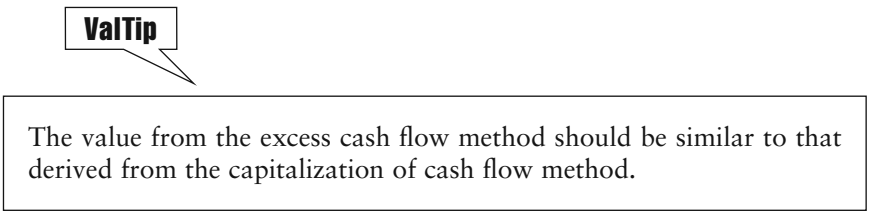
Caution should be exercised in the use of this approach which has yet to gain wide acceptance in the valuation community and courts.

COST-OF-CAPITAL ISSUES RELATED TO USE OF THE EXCESS CASH FLOW METHOD

An approach sometimes used in valuation assignments of certain types of closely held businesses or professional practices involves a method referred to as the excess cash flow (ECF) method. Often referred to as the excess earnings method,[25] it requires cost-of-capital determinations. The U.S. government first used ECF to measure the intangible value of distillers and breweries when Prohibition was first enacted in the 1920s. The ECF method is widely used and abused. However, it is important to know and understand it, especially when valuing professional practices for divorce purposes, as some judges and other triers of fact have become accustomed to seeing it.

Overly simplified, the excess cash flow method requires the analyst first to determine a return on the net tangible asset base of the enterprise and then to use this return to determine if there are "excess earnings" that can be attributed to the intangible asset base of the enterprise.[26] In applying this approach, the analyst must derive two cost of capital rates, one to be applied to the tangible assets and another to be applied to the excess earnings, if any.

The proper rate to apply to the tangible asset base is lower than that used for the intangibles because the income attributable to tangible assets is less risky. In theory, the weighted average rate of these two components should approximate the subject company's overall rate of return.



The rate typically applied to the total tangible asset base is derived from the required rates of return on those assets. In some instances, this rate might approximate the borrowing rates that could be achieved if the assets were used as collateral for a business loan. In other instances, the rate might be closer to what would be derived using a traditional build-up approach. This issue itself is what makes the use of the excess earnings method susceptible to scrutiny, because minor variances in the rate of return applied to the tangible asset base can create large swings in the indicated amounts of excess earnings and, in turn, large variances in the resulting indications of calculated intangible (goodwill) value.

[25] The excess earnings method was embodied in Revenue Ruling 68-609.

[26] A derivative of this method has the analyst evaluating the amounts of excess earnings of a professional or professional practice above the average returns for a peer group person or practice as the measure of whether or not there are any excess earnings to be capitalized as an indication of goodwill value. Again, this is a complex topic, which warrants further study outside of the rates discussion provided here.

The rates of return applied to the intangible asset base often are calculated by adding a subjectively derived premium to the tangible asset base rate to compensate for the fact that intangible assets are considered to be more risky than the tangible assets. There is no formula or consensus on how to derive this rate component, a fact that also contributes to the wide variations in results when using this method. This method is discussed in detail in Chapter 4.

Additional Information

The following addendum gives a more detailed explanation of many of the factors included in various Ibbotson publications. Ibbotson Associates granted permission for inclusion in this book. It is reproduced without author comment.

ADDENDUM (USED WITH PERMISSION. ALL RIGHTS RESERVED.)

A Brief Review of Other Ibbotson Associates ("IA") Resources Applicable to Valuation Assignments

Many valuation analysts are not fully aware of certain other IA resources that can be helpful in any particular assignment. A wealth of data is now accessible directly from the IA website at *www.ibbotson.com*, including the ability to download information, on a per usage basis, formally only available within their hardcopy published resources. For example and as detailed below, the IA Cost of Capital data provides historical information by industry on capitalization and growth rates, industry WACC rates, and debt to equity ratios on a market value basis.

IA Cost of Capital Yearbook

The IA *Cost of Capital Yearbook* provides data on over 300 industries. The yearbook is updated on a quarterly ("CCQ") basis with each release of quarterly data coming about one month after the end of a particular quarter.

The yearbook and its quarterly updates contain critical statistics needed to analyze corporations and industries:

- Five separate measures of cost of equity
- Weighted average cost of capital
- Detailed statistics for sales, profitability, capitalization, beta, multiples, ratios, equity returns, and capital structure

The same information contained in the print versions of the *Cost of Capital Yearbook* and its quarterly updates is also available for direct purchase and download from the IA website. Via the website option, the cost of analysis per SIC code is $50. Members of some professional organizations are eligible for a discounted rate for these IA resources.

Organization IA CCQ Data

This book contains cost of capital information by *industry*. The intent of this book is to provide cost of equity and other financial statistics useful in valuing companies. IA has not made any attempt to provide cost of capital information by individual company. It is their position that the models utilized in this book to provide cost of capital statistics will provide useful information when applied on a uniform basis to the industry as a whole.

According to IA, on an individual company basis, the models utilized in this book *may* provide information that is inaccurate or misleading. Any individual company cost of capital analysis should involve a careful analysis of all facts surrounding that company. Depending on individual company circumstances, all of the assumptions underlying the IA analytical models might not apply.

SIC Codes. This book is organized by Standard Industrial Classification (SIC) code. According to the U.S. Office of Management and Budget, the SIC is the statistical classification standard underlying all establishment-based Federal economic

statistics classified by industry. The SIC is used to promote the comparability of establishment data describing various facets of the U.S. economy. The classification covers the entire field of economic activities and defines industries in accordance with the composition and structure of the economy.

SIC codes are organized from one to four digits. A single-digit SIC code will be the most general classification; a four-digit SIC code will be the most specific. In addition, any company appearing in a four-digit classification will also appear in the three-, two-, and single-digit classifications. For example, a company included in industry 2844 will also appear in industries 284, 28, and 2.

Industry Size. Industries included in this publication have a minimum of five companies, which meet the criteria of the rigorous sorting and screening process outlined below. The IA analysis makes a distinction between industries containing less than ten companies and industries containing ten or more companies. Those industries with less than ten companies do not contain percentile data or data on the largest and smallest composites. It is the position of IA that industries containing less than ten companies will not provide meaningful percentile data or meaningful largest and smallest composite data.

Median and Composites. The financial statistics include median or composites for the entire industry, the largest ten percent of companies in the industry, and the smallest ten percent of companies in the industry. Largest and smallest companies are determined from the most recent fiscal year's dollar sales. The largest and smallest composites will contain a minimum of three companies. The user can use the composite data to see how the data varies by company size across an industry.

Latest and Five Year Average Statistics. Most financial statistics are presented in two different formats, latest and five year average. The latest statistic represents the most recently available data for a given statistic. For instance, the latest statistic for operating margin uses the most recent fiscal year's operating income divided by the most recent fiscal year's sales. The latest statistic for return on equity uses the most recent fiscal year's income before extraordinary items divided by the most recent month's equity capitalization.

The five year average statistics are calculated in a different manner; they are actually five year *aggregates*. For instance, the five year average statistic for operating margin is computed by taking the sum of the most recent five fiscal years' operating income divided by the sum of the most recent five fiscal years' sales. The five year average statistic for return on equity is the sum of the most recent five fiscal years of income before extraordinary items divided by the sum of the average annual equity capitalization for the most recent five years.

IA uses this method because it lowers the potential impact of anomalous financial performance. Another way to compute this average is to calculate the simple or weighted average of five years of statistics. This methodology can produce misleading results, however, when a company experiences unusual financial performance. Furthermore, some companies may "manage" their earnings over more than a single year's period.

For example, in computing a five year average price-earnings (P/E) ratio, assume the following data (assume that both the equity capitalization and earnings figures are in millions of dollars):

	Equity Cap.	Earnings	P/E Ratio
Year 1	100	1	100
Year 2	110	22	5
Year 3	120	10	12
Year 4	110	10	11
Year 5	105	8	13.1

The arithmetic average of the above price-earnings series is 28.2. Using this methodology, divide the summation of the five years of equity capitalization data by the summation of the five years of earnings data. In this example, the summation of equity capitalization over the five year period is 545, while the summation of earnings over the five year period is 51. Therefore, 545/51 produces a price-earnings ratio of 10.7. Obviously the two methodologies produce quite different results in this example. It is the position of IA that the price-earnings ratio of 10.7 gives the user a better indication of the average results over the preceding five-year period. Taking the arithmetic average of the five years of data can give too much weight to years of anomalous financial performance.

In addition, although the columns are labeled five year average, they may contain data for companies that have less than five years of data. If a company has only three years of data, the averaging methodology is the same, but is performed over a shorter period of time. IA has decided to include companies with less than five years of data to give the reader as much financial information as possible about an industry. In some of the smaller industries, excluding companies with less than five years of data from the five year average analysis would provide a sample of companies that would not produce meaningful results.

Limits on Cost of Equity and Cost of Capital. One area where IA does place boundaries on data is in the cost of equity and weighted average costs of capital sections. Costs of capital below the rate on the risk-free asset or above 100 percent are not displayed. It is Ibbotson Associates' position that costs of capital below the rate of return on the risk-free asset are not meaningful figures (NMF). In addition, IA has assumed that costs of capital above 100 percent are also not meaningful figures. In cases where this type of data exists, NMF is displayed.

Users of this data are currently given five different models from which costs of equity can be selected. Given the size of the database being analyzed, there will clearly be instances where certain cost of equity models will fail to produce useable numbers. When NMF is displayed in a cost of equity column, it should indicate to the reader that the model is producing unreasonable numbers and greater emphasis should be placed on other models.

CCQ Data Sources

The main data source for Cost of Capital Quarterly® (CCQ™) has been provided by Standard & Poor's Compustat, a division of McGraw-Hill, Inc. Compustat is the source for most individual company data including all balance sheet and income statement data, quarterly shares outstanding, and monthly data on closing price per share and dividend per share. The annual *CCQ Yearbook* includes Compustat data through the month of March of that particular year.

The data source for S&P 500 and Treasury bill monthly total return is Ibbotson Associates' EnCorr database. The Center for Research in Security Prices at the University of Chicago Graduate School of Business (CRSP™) provides size breakpoints for the New York Stock Exchange to determine Large-, Mid-, Low- and Micro-Cap Groups.

I/B/E/S (Institutional Broker's Estimate System) Consensus Estimates database is the source for analysts' estimates of future earnings growth. We incorporate these growth rates in the "Analysts" single-stage discounted cash flow model and in the first and second stages of the three-stage discounted cash flow model.

Dr. Kenneth French supplied the necessary data to compute the small minus big and high minus low aspects of the multi-factor Fama-French cost of equity model. Professor John Graham supplied the necessary marginal tax rate data by company for use in calculating unlevered betas and the weighted average cost of capital.

It is important to note that other than the data resource agreements with Compustat and I/B/E/S, IA has no other commercial relationship with either Compustat, Standard & Poor's, and I/B/E/S. It is their assumption that the data received from Compustat and I/B/E/S is accurate and reliable, but they make no statement of accuracy regarding the information received from either Compustat or I/B/E/S.

Preliminary Screening Process

There are a number of companies included in the Compustat database that IA has not included in CCQ. The intent is to eliminate companies, which have incomplete data or contain other characteristics that might distort any particular industry's financial statistics. It is their position that by eliminating these companies from their analysis, the statistics that CCQ provides are as pure as possible for a given industry. It should be noted that a substantial number of companies included in the Compustat database have been eliminated through our screening process. Companies are eliminated for any of the following reasons:

- *Dollar sales are not available for the most recent fiscal year or there has been no stock price reported for the most recent month.* Companies that do not have sales for the most recent year or a market value for the most recent month are excluded because a lack of these numbers indicates that the company is either not continuing as a going concern or that some radical financial restructuring is underway. The financial performance of such a company would probably not be indicative of the financial performance of other companies in the industry.

- *Sales of less than $100,000 for the most recent fiscal year or less than $10,000 in equity capitalization for the most recent month.* Companies whose sales do not exceed $100,000 or whose market values do not exceed $10,000 are

excluded because these companies are typically not substantial enough to have meaningful financial statements in comparison to other companies in the industry. Companies that are exceptionally small in terms of revenues or market capitalization tend to have unique financial characteristics that might have a distorting effect on the presentation of industry financial data.

- *The company has not reported full financial results for each of the last three fiscal years or month-end stock prices for the last twenty-four months.* Companies that lack financial data for the previous three fiscal years or stock prices for the previous twenty-four months are also excluded. Start-up companies also have a tendency to have unique financial statements in comparison to more mature companies. For this reason, companies that have less than three years of financial statements are excluded from the IA analysis. The analysis focuses on stockholders equity and operating income before depreciation to identify these companies.

  In addition, companies that do not have consistent reporting of financial data are also excluded. The analytical process looks for data over the same number of periods for the market value of equity and total assets. If data are not available for the same number of periods for both data values, both are eliminated. For example, if four years of data for the market value of equity are available, but five years of data for total assets are available, the company will be excluded from our analysis. This exclusion is not done for theoretical reasons, but because these companies provide significant challenges to the IA model used in calculating averages over the three- to five-year time period.

- *Less than 75 percent of sales in a single SIC code.* The Compustat database allows companies to present business segment sales for up to ten different SIC codes. The IA analysis focuses on this data to determine in which SIC an individual company should be classified. If a single four digit SIC represents more than 75 percent of that company's total sales, the company is classified into that SIC. If, however, an individual SIC does not represent 75 percent of company sales, that company will not appear in a four digit SIC industry.

For companies that do not meet the 75 percent requirement at the four digit level, the analysis again looks to the business segment sales to determine if 75 percent of sales are represented by a combination of SIC codes at the three digit level. If this is not successful, the analysis will look for 75 percent of sales at the two digit level and finally at the one digit level if necessary. If 75 percent of company sales do not fall in an individual SIC code, the company is eliminated from the analysis.

Companies that do not meet the 75 percent requirement are assumed to be conglomerates. Including a conglomerate in an industry analysis could have a distorting effect on an industry's financial performance. Industries differ by capitalization requirements, profitability, and asset utilization. A conglomerate that participates in two or more diverse industries could have completely different financial statements in relation to the other companies in the industries with which it competes. For this reason, conglomerates are excluded from the analysis.

Presented below are the business segment SIC codes and dollar sales (in millions) for two fictional companies.

Company A		Company B	
SIC	$Sales	SIC	$Sales
3443	730	2531	5,308
3533	649	3085	968
3534	1709	3691	774
3559	993	3822	2960
Total	$4,081	Total	$10,009

For Company A, industry 3534 represents 42 percent of sales for the business segments listed. At the two-digit level, industry 35 represents 82 percent of Company A's sales. Therefore, in our analysis, Company A would appear in industries 35 and 3. For Company B, the picture is not as clear. Industry 2531, represents 53 percent of sales for the business segments presented. At the one digit level, industry 2 represents 53 percent of sales and industry 3 represents 47 percent of sales for the business segments presented. Company B, therefore, does not meet the 75 percent of total business segment sales requirement and would be excluded from our analysis.

- *Gaps in monthly stock price data over the preceding 120 months.* The analysis uses up to ten years of monthly closing prices. If a company goes public over this time period, our analysis will still include it as long as it meets the other requirements outlined above. However, if an existing company has gaps in its monthly closing price data over this ten year time period, it is eliminated from the IA analysis.

  According to Compustat, gaps in month end price data are indicative of a major change in the financial structure or operating orientation of the company. In addition to providing significant challenges to the IA analytical model, the financial performance of a company undergoing a major change in financial structure will not be indicative of a going concern under "normal" business circumstances. Including such companies in the analysis, according to IA, could distort industry financial performance.
- *American Depository Receipts (ADRs).* The final screen sorts out American Depository Receipts (ADRs). Such securities do not have complete financial data and are therefore eliminated.

Growth Rates

A key data feature of the IA CCQ is the availability of growth rate information by industry. The data incorporates these growth rates in the single-stage discounted cash flow model and in the first and second stages of the three-stage discounted cash flow model. The analysts forecasts are obtained from I/B/E/S Consensus Estimates. The I/B/E/S is a database of consensus long-term growth rate estimates based on structured input from a large number of security analysts. I/B/E/S does not include growth estimates for all of the companies included in the analysis. In cases where a company does not have an I/B/E/S growth estimate, the industry average growth rate is substituted.

The growth rates for the composites are calculated based on a weighted average of the companies included in the composite in which the weights are determined based on the latest equity market capitalization. Companies included in the composite that do not have I/B/E/S growth rates are excluded from this calculation. In those instances where companies in the largest or smallest composite do not have an I/B/E/S growth rates, the industry composite is substituted.

In limited cases, I/B/E/S growth rates will not be available for any company in the industry. In this case, the industry average growth rate for the preceding SIC code is substituted. For example, if industry 7371 does not have I/B/E/S growth rates for any of the companies included in the industry, the industry average growth rate for industry 737 is substituted.

Industry Composites

To give readers of CCQ more useable information, Ibbotson Associates has created three composites of industry financial performance. Each composite is derived from companies within the industry and gives the reader a sense of the financial performance for the industry as a whole, the largest companies in the industry, and the smallest companies in the industry.

Total assets, total debt, total book equity, equity capitalization, net sales, operating income, income before extraordinary items, and cash flow for the industry are calculated by taking the sum of individual company figures for any given period. Share prices and dividend yields for the industry are estimated over time based on the market capitalization weighted average performance for the underlying companies in the industry. Using this information, all industry financial ratios, betas, and costs of equity are determined using the same methodology employed for individual companies.

Statistics for the largest and smallest composites are calculated in a similar fashion. A sample of the largest and smallest companies is selected. The largest composite includes either the top ten percent or the three largest companies (whichever results in the greater number of companies) in terms of dollar sales for the most recent fiscal year. The companies identified from the most recent year's dollar sales are utilized for all financial calculations for all time periods. Stated another way, companies identified as the largest in the most recent fiscal year are considered the largest companies for all calculations for all time periods even if they were not necessarily the largest companies for each year in the historical time period. The smallest composite includes either the bottom ten percent or three smallest companies (whichever is greater) in terms of dollar sales for the most recent fiscal year. The composite statistics are created in the following manner:

1. Total assets, total debt, total book equity, equity capitalization, net sales, operating income, income before extraordinary items, and cash flow are a sum of the individual company figures included within the composites for any given time period.
2. Equity capitalization is calculated as the summation of equity capital for all companies within the composite. Equity capitalization is calculated as price per share multiplied by the number of shares outstanding. The number of shares outstanding is available for each company on a quarterly basis only. We have estimated the shares outstanding for each company for each month using the following methodology:

   a. The most recently available shares outstanding are assumed to be the shares outstanding for the most recent three months. The second quarterly shares outstanding are assumed to be the shares outstanding for the second most recent three month period. This procedure is followed for the entire 120 month period.
   b. If there are any gaps in the shares outstanding data, the shares from the prior quarter are assumed to be the shares outstanding for the quarter where data is missing.
   c. The monthly percentage change in price is calculated for each company included in the composite. Multiplying the monthly change in price for each company by its weight provides that company's contribution to the composite's monthly percentage price change.
   d. It is possible, and even common, for companies included in the composites not to have complete data over the entire time. In these instances, the number of companies included in the composite will change.
3. The weighted average dividend yield for the composite is calculated by adding the product of individual company dividend yield and individual company composite weight for each company within the composite. Once the dividend yield has been calculated, the dividend per share for the composite can be calculated as monthly dividend yield multiplied by monthly price per share.
4. Shares outstanding for the composite are determined by dividing monthly equity capitalization by the monthly price per share for the composite.
5. At this point we have determined the composite's monthly price per share, monthly dividend per share, monthly shares outstanding, total assets, total debt, total book equity, equity capitalization, net sales, operating income, income before extraordinary items, and cash flow. This is the same information that is extracted from Compustat to perform most of the necessary calculations included in this publication. In short, we can treat the composite just as we treat any other company in performing the calculations included in this book.

The largest and smallest composite statistics are not provided for industries with less than ten companies because of the limited size of these industries.

Risk Premia Reports

Ibbotson is one of the most widely cited sources of equity risk premia, which reaches well beyond the standard equity risk premia most valuation practitioners use and rely on from the SBBI VE edition. Other equity risk premia studies available from IA include:

- *International Equity Risk Premia*—Updated annually. Equity risk premia are now available for 16 countries, with data going back to 1970 for most countries.
- *Risk Premia Over Time Report*—Updated annually. Provides equity and size premia over all historical time periods. Customize your analysis by choosing your own start date and end date.
- *Standard & Poor's (previously PricewaterhouseCoopers) Risk Premia Study*—Updated through year-end 1999. The study divides companies into 25 separate size groups and is discussed in more detail in the following section.

- *Canadian Risk Premia Report*—Updated annually. Provides Canadian equity premiums over all historical time periods. Customize your analysis by choosing your own start date and end date.
- *United Kingdom Risk Premia Report*—Updated annually. Provides United Kingdom equity premiums over all historical time periods. Customize your analysis by choosing your own start date and end date.

Grabowski/King Risk Premia Study

Two individuals at Standard & Poor's have compiled a detailed risk premia study using information through year-end 1999. These studies by Roger Grabowski, ASA, and David King, CFA, both previously with PriceWaterhouseCoopers, cover eight added measures of size, listed below, divided into 25 different size groups based on the following criteria:

Market Value of Equity	Book Value of Equity
5-Year Average Net Income	Market Value of Invested Capital
Total Assets	5-Year Average EBITDA
Sales	Number of Employees

The most recent update includes a new section with data quantifying the relationship between rates of return, company size, and fundamental measures of company risk.

Methodology

In two recent articles appearing in Business Valuation Review, Messrs. Grabowski and King presented historical equity premiums for 25 size-ranked portfolios using eight alternate measures of company "size." Part I of the current update provides the latest revision of their study that now includes historical data updated through the end of 1999.

The first update presented an update of data that appeared in another recent article. The second update presented data quantifying the relationship between rates of return, company size, and fundamental measures of company risk.

The second update differs from previously published versions in three major ways. First, it includes (for the first time) tables of equity premiums over the Capital Asset Pricing Model (CAPM). Second, it includes a correction for the "delisting bias" in the CRSP database that was discussed recently in the financial literature. Third, it includes data for companies ranked by Total Assets.

In the first update, companies were sorted by the company size, breaking the NYSE universe into 25 size-ranked portfolios and adding AMEX and NASDAQ companies. These portfolios were limited to companies with a track record of profitable performance (creating a separate "high financial risk" portfolio composed of companies that are losing money, have high leverage, or are in bankruptcy). Eight alternate measures of company "size," including fundamental financial characteristics such as sales and book value are used. The data shows a clear inverse relationship between entity size, based on the difference criteria, and historical rates of return.

The second update presented two varieties of data. First, the correlation between company size and three measures of company risk based on accounting information is documented. The relation between these three risk measures and historical rates of return is also documented. Companies are sorted by the measure of risk, breaking the universe into 25 risk-ranked portfolios. The results reported herein suggest a strong relationship; that is, the greater the risk as measured by historical accounting information, the greater the rate of return earned by equity investors.

IA Beta Information

The *IA Beta Book* ("IABB") is designed to complement the *Cost of Capital Quarterly* (CCQ) *Yearbook* and its quarterly supplements. The IABB contains company-specific statistics critical to calculating the cost of equity under CAPM and the three-factor Fama-French estimation model. The IABB does not provide specific cost of equity estimates for individual companies, but does provide the necessary information for practitioners to calculate both CAPM and Fama-French (FF) costs of equity. In addition to the beta statistics listed in this book, an estimate of the appropriate equity risk premium and risk-free rate are needed, together with any required adjustment for unsystematic risk, to calculate the cost of equity under both of the models.

Ibbotson Beta Book is also the only source of Fama-French Multi-Factor model data (detailed below) on a company-specific basis. Employing the most current techniques and methods, *Beta Book* contains traditional 60-month beta calculations and betas adjusted toward peer group averages instead of toward the market. Ibbotson provides a variety of beta measures including both levered and unlevered betas. The *IABB* contains data on over 5,000 companies.

For application under the CAPM model, the IABB provides several equity beta statistics including traditional levered and unlevered ordinary least squares (OLS) estimates, peer group betas, and levered and unlevered adjusted betas. Each of these statistics is intended to provide the user with additional information regarding the actual equity beta of each individual company. For the FF model, the book provides the FF beta factor in addition to the size and value factors that Fama and French identify in their model.

IABB Data Sources

The main data provider for the *IABB* has been Standard & Poor's Compustat, a division of McGraw-Hill, Inc. Compustat is the source of all individual company data including closing price per share and dividend per share. The *Beta Book* is printed semi-annually with data through June or December of each year. The data source for the Treasury bill monthly yields is Ibbotson Associates' EnCorr database. Dr. Kenneth French supplies the necessary data to compute the small minus big and high minus low aspects of the multi-factor model. Professor John Graham of Duke University supplies the necessary marginal tax rate data by company for use in calculating unlevered betas.

Organization of IABB Data

The *Ibbotson Associates' Beta Book* is organized alphabetically by company name. Dictionary guides at the edges of each page provide a reference for the range of companies that are on each page.

Statistics for each company are presented as follows:

Ticker	Stock exchange ticker symbol
Company	Name of the company

CAPM: Ordinary Least Squares

Levered Raw Beta	OLS estimate of levered beta
t-Stat	t-statistic for the OLS estimator of levered beta
R-Sqr	R-squared statistic for the OLS regression
Pr Grp Beta	Peer group beta (sales-weighted average of industry betas)
Ibbotson Beta	Weighted average of regression beta and peer group beta
Unlevered Raw Beta	OLS estimate of unlevered beta
Ibbotson Beta	Weighted average of unlevered regression beta and unlevered peer group beta

Fama-French Three-Factor Model

FF Beta	Coefficient on excess market return
FF t-Stat	t-statistic for the market coefficient
SMB Prem	"Small minus big" premium for the size factor
SMB t-Stat	t-statistic for the SMB coefficient
HML Prem	"High minus low" premium for the book/market factor
HML t-Stat	t-statistic for the HML coefficient
FF R-Sqr	R-squared for the three-factor multiple regression

IABB Beta Estimation Methodologies

Ibbotson Associates' Beta Book uses the following methodologies for estimating betas from historical return data, estimating industry betas, and combining regression betas and peer group betas to form adjusted betas.

Selection of Companies. A company from the Compustat database is included in this publication if it meets three conditions. First, a company must have at least thirty-six months of return data. (Any company with less than sixty months of return data is marked with an asterisk.) Second, it must have sales greater than

$100,000 in the most recent year. Third, a company must have a market capitalization greater than $10,000 for the most recent month.

Market Proxy. IA uses the S&P 500 as the market portfolio in the beta calculations. The S&P 500 is the market portfolio for both *Cost of Capital Quarterly* (CCQ), and *Beta Book* publications.

Capital Asset Pricing Model (CAPM)

The beta calculations are based on the capital asset pricing model as developed by Mossin [1966], Lintner [1965], and Sharpe [1964]. According to the CAPM, there is a direct linear relationship between the risk of an asset relative to the market and the return that can be expected from that asset. The measure of this systemic risk is the security's beta. An investment with a beta of zero has an expected return equal to that of the risk-free rate. An asset with a beta of one has an expected return equal to that of the market.

To estimate the beta of a company, monthly total returns of the company's stock in excess of the risk-free asset are regressed against the monthly total returns of the stock market in excess of the return on the risk-free asset. In all of the CAPM regressions used in the *IA Beta Book*, the total returns of the S&P 500 are used as the proxy for the market returns. The series used as a proxy for the risk-free asset is the yield on the 30-day T-bill. Total returns for both individual stocks and the market proxy are determined by calculating price appreciation and dividend reinvestment. A 60-month time frame is used for the regression. If less than 60 months of data are available for a company, the beta is then calculated using the months of data that are available, with a minimum of 36 months as acceptable.

CAPM Regressions

Raw Beta. The Raw Beta of a company is computed by running a simple regression with the company's monthly excess stock returns over Treasury bill returns as the dependent variable and the monthly excess returns of the market over Treasury bill returns as the independent variable. If a Raw Beta estimate is greater than five in absolute value, it is reported as "NMF" for "not meaningful."

Levered Beta. A levered beta measures the systematic risk for the equity shareholders of the company. No adjustment is made for the debt financing undertaken by the company. A levered equity beta incorporates the business and financing risks undertaken by the company and born by the equity shareholders. For each company and for each composite, IA calculates the Raw Ordinary Least Squares Beta, and the Ibbotson Adjusted Ordinary Least Squares Beta estimates of systematic risk, as described above.

Unlevered Beta. The unlevered beta (also known as asset beta) removes a company's financing decision from the beta calculation. The unlevered beta reflects a company's business risks. The unlevered beta is computed as follows:

$$ß_{Ui} = \frac{ß_{Li}}{1 + \frac{BD_i}{EC_i}(1 - t_i)}$$

Where:

BD_i = $STD_i + LTD_i + PSTK_i$

EC_i = $P_i \times S_i$

$ß_{Ui}$ = the unlevered beta for company i

$ß_{Li}$ = the levered beta for company i

BD_i = Book debt for company i

EC_i = Equity capitalization for company i

STD_i = Book value of debt in current liabilities for company i

LTD_i = Book value of long-term debt for company i

$PSTK_i$ = Book value of preferred stock for company i

P_i = Price per common share for company i

S_i = Common shares outstanding for company i

t_i = Marginal tax rate for company i

Recent research by John Graham (1996) demonstrates that the usual approach to estimating the marginal tax rate is prone to substantial measurement error. By modeling the uncertainty of taxable earnings, as well as the major features of the U.S. tax code, Graham shows that only about one-third of Compustat firms have an expected marginal tax rate equal to the top rate. There is substantial variation in tax rates across firms and through time, with up to one-third of firms having a tax rate greater than zero but less than the top statutory rate.

Thus, for the majority of firms, it is inaccurate to assume that they are subject to the top statutory tax rate. Reference to the Company Tax Rates information on the IA cost of capital website can be useful for purposes of analyzing appropriate tax rates for application in this area. The implicit assumption of the IABB model is that the state tax rate is 0 percent. Technically, the IABB model should include state taxes, however, state tax regulations vary so greatly that they are difficult to incorporate into a generalized model. For this reason, they have chosen to ignore them.

For each company and for each composite, we calculate the Levered Adjusted Ordinary Least Squares Beta estimate of systematic risk, as described and apply the above equation to obtain estimates of unlevered beta.

Adjusted Betas

Based on the theory that over time a company's beta tends toward its industry's average beta, *Beta Book* presents an adjusted beta for each company. The adjusted beta is a weighted average of the company's regression beta and its peer group beta. In earlier editions of the *Beta Book*, adjusted beta was calculated by applying a weight of two-thirds to the regression beta and one-third to the peer group beta. In this way, all regression betas were "shrunk" to industry averages by the same amount.

Beginning with the December 1996 edition, *Beta Book* presents adjusted betas in which the amount of shrinkage depends on the degree of statistical confidence of the regression beta estimate. The amount of shrinkage is calculated using a formula first suggested by Vasicek [1973]. With Vasicek's formula, the greater the statistical confidence of the regression beta, the closer its weight is to 100 percent. Ibbotson betas are calculated using Vasicek shrinkage for the OLS estimates.

Vasicek Shrinkage Technique. The motivation behind calculating an adjusted beta is to make a forecast of the true beta in the future which can be used to estimate the expected return.

The adjusted beta calculation can be written as follows:

$$\text{Adjusted Beta} = (1 - \text{weight}) \times \text{Peer Group Beta} + \text{weight} \times \text{Company Beta}$$

Where:

$$\text{weight} = \frac{(\text{cross sectional standard error})^2}{(\text{cross sectional standard error})^2 + (\text{time series beta standard error})^2}$$

This adjustment equation reflects the theory that, over time, company betas will tend toward their industry average beta. For example, the betas of public utility companies tend to be less than one. Therefore, when adjusting the beta of a public utility company, it is appropriate to adjust its beta toward the average beta of the other companies that make up its industry group.

The formula for *weight* is based on the formula suggested by Vasicek [1973]. The greater the statistical confidence in the regression beta, the closer that *weight* is to one.

Industry Betas. In some earlier editions of *Beta Book* (prior to December 1996), each industry beta was estimated by the market capitalization-weighted average of the betas of all companies in the industry. A company was considered to be in a particular industry if at least 75 percent of its sales was in the industry as defined by the primary SIC codes of its business segments. If a company did not meet the 75 percent rule, it was dropped from the analysis.

Many companies that do not meet the 75 percent rule are among the largest participants in their industries. To avoid eliminating them, we use a "Full-Information" procedure for estimating industry betas. In this procedure, a single cross-sectional regression that includes *all* companies is used to estimate industry betas from the betas of the companies and their percentage of sales in all of the industries.

The Full-Information approach was first suggested by Ehrhardt and Bhagwat [1991]. Because Ehrhardt and Bhagwat performed the regression using ordinary least squares, their industry betas were equally weighted across companies. To obtain market capitalization-weighted industry betas, Kaplan and Peterson [1998] developed a capitalization-weighted regression technique. The industry betas that are used in this edition of *Beta Book* to form peer group betas for OLS Betas are estimated using the procedure developed by Kaplan and Peterson.

Full-Information industry betas are estimated from the OLS Betas of all companies using the market capitalization-weighted cross-sectional regression procedure described by Kaplan and Peterson [1998]. In this procedure each observation

in the sample represents a company that participates in varying degrees in different industries. The dependent variable is the regression beta and the independent variables are the percentages of participation in the various industries. Since the percentages add up to one and the observations are market capitalization-weighted, the estimated coefficients on the participation percentages are the estimates of the pure-play industry betas. All companies that have OLS Betas less than five in absolute value are included in the sample.

Industries are defined by two-digit SIC codes. The industry participation percentages of a company are measured by assigning the sales of each business segment to the industry defined by the first two digits of its primary SIC, and then dividing industry sales by total sales of the company. An industry must have at least five companies to have an independent variable represent it in the regression. For the companies in *Beta Book* that have OLS Beta reported, this leads to over 65 distinct industries being defined. The Full Information approach to computing industry betas as described above has recently been accepted in the Summer 1998 edition of *Financial Management*. The accompanying table shows the estimates of the pure-play industry betas for the OLS Beta as well as other regression statistics.

Peer Group Beta. The peer group beta takes into consideration the industry betas of all industries in which a company is involved. It is the sales-weighted average of the betas for each industry in which a company has sales.

Example of Calculating the Peer Group Beta. Company A has a peer group beta of 0.71. It lists sales in 4 different two digit SIC codes. The peer group beta is calculated in the following manner:

SIC Code	Industry OLS Beta	Sales in Industry ($ millions)	% of Sales in Industry	Sales-Weighted OLS Beta Component
13	0.56	9,396	26.17%	0.15
28	1.05	5,698	15.87%	0.17
29	0.68	20,767	57.84%	0.39
65	0.38	44	0.12%	0.00
	Totals	35,905	100.00%	0.71

Fama-French Three Factor Model

The Fama-French Three Factor Model is estimated by running a time series multiple regression for each company. The dependent variable is the company's monthly excess stock returns over Treasury bill returns. The independent variables are as follows:

- The monthly excess return on the market over Treasury bills.
- SMB ("small minus big")—the difference between the monthly return on small-cap stocks and large-cap stocks.
- HML ("high minus low")—the difference between monthly returns on high book-to-market stocks and low book-to-market stocks.

The multiple regression formula can be written as follows:

$$R_i - R_f = b_i (R_m - R_f) + (s_i \times SMB) + (h_i \times HML) + e$$

In the Fama-French (FF) model, *beta* measures the sensitivity of a stock to movements in the market.

The *SMB premium* represents the return premium that companies with small market capitalization usually experience relative to companies with large capitalization. It is computed by multiplying the coefficient for the SMB factor in the multiple regression by the difference between the historical average annual returns on the small-cap and large-cap portfolios.

The *HML premium* represents the return that investors expect from companies that have a high book equity to market equity ratio. The Fama-French model predicts that a company with a high book equity-to-market equity ratio has an excess return that is not captured in the market return. The number which is presented is the coefficient for the HML factor multiplied by the difference between the historical average annual returns on the high market-to-book and the low market-to-book portfolios.

How to Use the Fama-French Three Factor Model

The data provided for the Fama-French model allows for easy cost of equity calculations. The beta provided by the Fama-French model is similar to the beta provided by the capital asset pricing model; it is a measure of the risk of a stock relative to the market. By multiplying the Fama-French beta by the equity risk premium, and adding the HML and SMB premiums, and the risk-free rate, the cost of equity capital for a company is obtained.

For the HML and SMB factors, the regression coefficients have been multiplied by the premium for each of the factors. The data presented is the percent premium over the market return which each stock receives because of the small company premium and the value premium.

To use the results, apply the following equation:

$$\text{Risk-Free Rate} + (\text{Equity Risk Premium} \times \text{FF Beta}) + \text{SMB Premium} + \text{HML Premium}$$

Practitioners can search for and purchase betas on a company-by-company basis through the access provided at the IA website. The beta detail for each individual company in the database is available for download at $15 per entity.

Containing over 5,000 companies, the hardcover *Ibbotson Beta Book* is updated semi-annually and can be purchased for $625 or both semi-annual editions for a calendar year for the combined price of $1,000 (year 2001 prices). Purchase can be done via telephone at 800-758-3557 or *www.ibbotson.com*.

CHAPTER 6

Market Approach

OVERVIEW

The idea behind the market approach is that the value of a business (often a small, privately held firm) can be determined by reference to "reasonably comparable guideline companies" (sometimes called "comparables" or "comps"), for which values are known. The values may be known because these companies are publicly traded or because they were recently sold and the terms of the transaction were disclosed. While data sources that provide financial and other information about guideline companies in a particular industry are useful for understanding industry norms, they are useful for valuing businesses only if the underlying values of the businesses are known.

The market approach is the most common approach employed by real estate appraisers. Real estate appraisers, particularly those who specialize in residential real estate, are fortunate in that they generally have tens or even hundreds of comps from which to choose. For a business valuation professional, a large set of comps may be half a dozen.

Questions to Consider

What does "comparable" mean? Does it imply being in the same industry as the subject? How important is size, and what measurement of size is relevant: sales, profits, assets, market capitalization? Is location a significant factor? How much weight should be given to financial ratios (i.e., profit margins, current ratios, etc.) in the selection of guideline companies? What about business and financial risks?

What are the key value indicators? What do buyers of these kinds of businesses look at when determining what they will pay? On what types of factors do investors in publicly traded companies focus: revenues, income, cash flow, number of clicks, or assets?

What are the differences between the subject and the comps, and how does one incorporate them into the analysis? If all of the guideline companies were identical to one another and the subject company was identical to the guideline companies, then its value would be equal to the values of the guideline companies (all of which would have values identical to one another). Since this is never the case, the analyst has to identify the important differences and determine what adjustments need to be made to arrive at a reasonable estimate of value for the subject.

How much weight should be placed on the market approach in the overall valuation? The market approach is often one of several approaches used in a valuation analysis. The valuation analyst must decide how much importance the value derived from the market approach will have in the overall assessment of value. This judgment normally is based on the number of guideline companies and the quantity and quality of the data. Sometimes the value from the market approach might be used simply as a sanity check on the other values, and is not explicitly included in the final assessment.

Quantitative and Qualitative Factors

As with other valuation approaches, the market approach does not exempt the valuation analyst from having to exercise professional judgment. The use of guideline companies is a starting point in that they provide analysts with some objective, quantitative guidance; these value indications must, however, be tempered with consideration of qualitative factors, such as product quality, depth and breadth of management, and employee turnover—factors that can be ascertained only from a solid understanding of the subject company and the experience of the business appraiser.

Market Approach Is Forward Looking

Some people contend that the market approach, unlike other valuation approaches, is not forward looking (e.g., forecasts). This is absolutely incorrect. The value of a business is not a function of how it performed last year or the year before; rather it is a function of its perceived future prospects. Historical balance sheet and income statements, from which many of the ratios used to value companies have been developed, can help tell where a business has been. More important from a valuation perspective, they provide the necessary foundations from which forecasts can be developed. Yet these are only some of the many pieces of information investors consider when establishing a price. For example, biotechnology start-ups, which may have no sales and negative earnings, can have positive market values simply because investors believe that firms will show positive earnings and cash flows in the future.

ValTip

The prices paid for businesses and business interests reflect investor expectations. Consequently, any valuation methods that use stock or sales prices of businesses, including the market approach, must necessarily be prospective in nature.

TYPE OF VALUE OBTAINED

The value obtained using the market approach is a function of the type of guideline company information used. When sales transactions are the basis of the value, this value generally represents a controlling, nonmarketable value. It is controlling because it is based on acquisitions of entire companies, and it is relatively nonmarketable because the transactions represent sales of private entities, for which no

immediate and ready market exists (as compared to the liquidity of public stocks). However, it is marketable relative to how long it takes to sell the company as compared to a peer group of transactions. The value obtained using publicly traded companies often is considered a noncontrolling marketable value. It is noncontrolling because most of the trades are of small, minority blocks of stock,[1] and it is marketable because the stocks of publicly traded companies can be bought and sold quickly without significant transaction costs (relative to what is involved in the sale of a private company).

The value indications, however, may be different from those given above if, for example, there has been some modification to the subject company's financial information. These issues will be discussed in more detail later.

ADVANTAGES AND DISADVANTAGES OF THE MARKET APPROACH

As with any valuation approach, the market approach has its advantages and disadvantages, whether perceived or actual.

Advantages

- *It is fairly simple to understand.* Companies with similar product, geographic, and/or business risk and/or financial characteristics should have similar pricing characteristics. People outside of business can understand this logic.
- *It uses actual data.* The estimates of value are based on actual stock prices or transaction prices, not estimates based on a number of assumptions or judgments.
- *It is relatively simple to apply.* The income approach requires the creation of a mathematical model. The market approach derives estimates of value from relatively simple financial ratios, drawn from a group of similar companies. The most complicated mathematics involved is multiplication.
- *It includes the value of all of a business's operating assets.* The income approach also has this advantage. Using the asset approach, all of a business's assets and liabilities must be identified and valued separately—both tangible and intangible assets and liabilities. Many of the intangible assets may not appear on the balance sheet (e.g., customer lists, trade names, and goodwill). This is one of the reasons the asset approach is often not used to value ongoing businesses, but rather businesses on a liquidation basis, where the value of these intangible assets is small or zero.

ValTip

The values derived from both the market and income approaches implicitly include all operating assets, both tangible and intangible.

[1] Analysts are not in agreement on this point. Some contend that when public guideline multiples are applied to closely held companies, the resulting value does not only represent a minority position, since many public companies are run very efficiently and a control buyer would not pay any more for the business unless he or she could realize synergies; thus minority and control values are equal.

- *It does not rely on explicit forecasts.* Sometimes an Achilles' heel of the income approach is the set of assumptions used in developing the forecasted cash flows. The market approach does not require as many assumptions.

Disadvantages

- *No good guideline companies exist.* This may be the biggest reason the approach is not used in a valuation; the analyst may not be able to find guideline companies that are sufficiently similar to the subject. Some companies are so unusual or so diversified that there are no other similar companies.
- *Most of the important assumptions are hidden.* Among the most important assumptions in a guideline price multiple is the company's expected growth in sales or earnings.

> Implicit in the prices of publicly traded companies and transactions is some assumption about growth. Generally, the higher the expected growth, the higher the value, all else being equal.

  Unlike in the income approach, where the short-term and perpetual growth rates are listed as assumptions, there is no explicit assumption (in the multiple) about the subject company's growth. Consequently, the implicit subject company growth will be a function of the growth rates built into the prices of the guideline companies, on which the value of the subject is based. Other important assumptions such as risk and margins, are not explicitly given.
- *It is not as flexible or adaptable as other approaches.* Unlike the income approach, in the market approach it is sometimes difficult to include unique operating characteristics of the firm in the value it produces. For example, a shifting product mix, resulting in higher future margins, may not be easily incorporated into a market approach analysis because there may be no other guideline company whose product mix is expected to change in a similar fashion. Likewise, synergies cannot be easily factored directly into the analysis. To estimate the value of these two types of situations, either a combination of the market and income approaches is necessary, or the analyst will have to use professional judgment to adjust the value outside of the parameters suggested by the guideline companies. Furthermore, the market approach typically cannot be used to value a number of unusual or intangible assets (e.g., customer lists, mortgage servicing rights, and noncompete agreements).

BASIC IMPLEMENTATION

As discussed earlier, one of the advantages to the market approach is the apparent simplicity in implementing it. At its simplest, it requires only multiplication and perhaps some subtraction, depending on the multiple selected. The basic format is:

$$\text{Value}_{\text{Subject}} = \left[\left(\frac{\text{Price}}{\text{Parameter}}\right)_{\text{comps}} \times \text{Parameter}_{\text{Subject}}\right] - \text{Debt}_{\text{Subject}}{}^{*}$$

*Invested Capital Multiples

"Parameter" might be sales, net income, book value, and the like. The Price/Parameter multiple is the appropriate pricing multiple based on that parameter (e.g., price/sales, price/net income, price/book value) and taken from the guideline companies. In some cases (invested capital multiples) the debt of the subject company may have to be subtracted.

SOURCES AND CHARACTERISTICS OF GUIDELINE COMPANY DATA

ValTip

Guideline company information can be drawn from two distinct pools.

1. Guideline company transactions
2. Guideline publicly traded companies

Understanding the value implications of using these different types of data is crucial in properly applying the market approach.

Guideline Company Transactions

Guideline company transactions refers to acquisitions and sales of entire companies, divisions or large blocks of stock of either private or publicly traded firms.

INFORMATION SOURCES

A number of publications collect and disseminate information on transactions. Most publications make their databases accessible on the Internet for a fee. Among the most widely used are:

- BIZCOMPS®
- Done Deals
- Institute of Business Appraisers (IBA) database
- Mergerstat
- *Pratt's Stats*™

The IBA and BIZCOMPS® databases cover transactions of relatively small companies. The IBA database has considerably more transactions than BIZCOMPS®. As of August 2001, the BIZCOMPS® database had almost 5,000 trans-

actions, with a median selling price of $115,000. The median revenue of the companies included was $325,000.[2]

In 2001, *Pratt's Stats*™ included over 3,400 transactions. The companies covered tend to be considerably larger, with a median revenue of $5 million and a median selling price of $6.4 million. There were 391 transactions that had a sale date within the last 12 months. These companies had median revenue of $1.4 million and net income of $18,000. The median equity/net income multiple was 8.8, but the range was very large. The information provided for each transaction is much more detailed than it is for either the BIZCOMPS® or IBA databases.

The Done Deals and Mergerstat data sets generally include transactions where one of the companies is/was publicly traded. (*Pratt's Stats*™ also include some publicly traded transactions.) As a consequence, readily available financial statements (8-Ks or 10-Ks) may be used to find additional information about these transactions, if needed.

Done Deals had approximately 5,000 transactions as of October 2001. The median sales price for the latest 12 months' transactions was about $14.5 million, implying a median price to earnings multiple of 18.3. As with the other databases covering actual transactions, the range of observations is very large.

ADVANTAGES AND DISADVANTAGES OF THE GUIDELINE COMPANY TRANSACTION METHOD

Guideline company transaction information can be useful in the case of a contemplated sale or purchase, or where the ownership characteristics of the subject matches those of these transactions—typically controlling and nonmarketable (the latter characteristic would not necessarily be true for the publicly traded company transactions, where a publicly traded company was acquired).

ValTip

When using the market approach to value a very small business, the guideline company transaction method is usually a better method than guideline publicly traded company analysis. Comparable transaction information is often available for very small businesses, but even the smallest guideline publicly traded company may be vastly larger than the subject.

The application of these data to the subject company is complex because of the difficulty determining whether a transaction is truly comparable given the limited information available in the database. This is one of the major disadvantages of using guideline company transaction information.

[2] *Shannon Pratt's Business Valuation Update,* Vol. 7, No. 8 (August 2001), p. 8.

ValTip

The lack of detailed information on comparable transactions is the major disadvantage of this approach. It is difficult to know the structure of the transactions or the motivation of the buyer or seller.

Some examples of information difficultes are as follows: Were there any expected synergies in the price paid for a particular business, or was the buyer a financial buyer? Was there a noncompete agreement, employment contract, promises of perquisites, terms, or other aspects to the transaction that would affect the actual price paid for the business? While some databases contain this type of information, it may not be sufficiently detailed to compute a "true" purchase price.

ValTip

Detailed financial statements of the acquired company are usually not available, so it is impossible to make certain adjustments to the data underlying the pricing multiples, assuming such adjustments are necessary.

PUBLICLY TRADED COMPANIES

Publicly traded companies are companies whose securities are traded on any of the major exchanges: New York Stock Exchange (NYSE), American Stock Exchange (AMEX), or National Association of Securities Dealers Automated Quotation System (NASDAQ). As currently more than 10,000 such companies exist, they provide a rich source of information for valuations.

Information Sources for Financial Statement Data of Publicly Traded Companies

Publicly traded companies are required to file their financial statements electronically with the Security and Exchange Commission (SEC). These filings, made under the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) program are public information and are available on the SEC website at *www.sec.gov*.

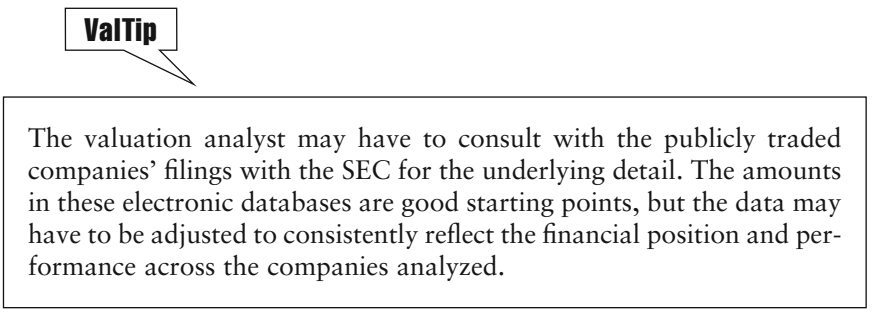
Edgar documents can also be obtained from a number of commercial vendors, who add value by allowing the user to extract selected items (i.e., the balance sheet, income statement, etc.) or to search all filings for those meeting certain criteria. In addition, vendors put the data for most or all publicly traded companies in a standardized format. A partial list of those vendors who reformat the data into standardized formats is:

- Alacra
- Compustat
- Disclosure
- Market Guide
- Mergent Company Data Direct
- OneSource

Each database contains currently operating U.S. companies. In addition to standardizing data across companies, these vendors also allow the user to screen for companies using both descriptive and financial variables. Descriptive data include business descriptions, Standard Industrial Classification (SIC) and/or North American Industry Classification System (NAICS) codes, and/or industry descriptions. Standardized financial data are provided both quarterly and annually, for periods ranging from five to 20 or more years.

Standardization of Data

Standardization of the data in the publicly traded company's financial statements is beneficial for the analyst because most financial concepts are uniform across all companies. One of the trade-offs of data standardization across companies is the loss of detail. For example, operating profit for IBM is composed of the same subaccounts as it is for Dell; however, the detail of what is in these subaccounts is usually not available in these databases.



In some cases, the data vendor must make judgments about how to compute the numbers to present certain concepts. These may not be the same judgments the analyst would make if presented with the same information. Last, because parameter definitions differ across databases, one data set is often used for all portions of the analysis to lessen the likelihood of glaring inconsistencies.

Restatement of Data

Another issue to consider when using a standardized, publicly traded company financial statement database is how the restatements are treated. The financial statements provided by Compustat, OneSource, and Market Guide are restated; restated financial statements replace the originally issued ones. Mergent and Disclosure provide the statements as they were originally issued, without any restatements. Restated financials are

important when the valuation date is current and comparisons are being made across time for each of the guideline companies. They can be problematic, however, if the valuation date is in the past and financials known as of that date are required.

Periodicity of Data

Finally, the dates in these financial statement databases are a function of the companies' reporting periods and how quickly they release their financial results after the financial reporting period. The latest quarter, the latest 12 months, or the latest fiscal year may represent different time periods for any two companies. For example, Company A's latest available quarter might end on February 28, 2002, while Company B's might be as of November 20, 2001. If the analyst were to compare results for the latest available quarters, in this case, he or she would actually be comparing data three months apart. Finally, there is a lag time between when the financial statements are released (in 10-K or 10-Q SEC filings) and when they are updated in these data sets.

INFORMATION SOURCES FOR INDUSTRY "COMPS"

Other vendors provide information that can be useful in identifying publicly traded companies in the same industry as the subject. A partial list of such vendors includes:

- Hoover's Online
- Ibbotson Associates' *Cost of Capital Yearbook*
- PricewaterhouseCooper's EdgarScan™

Hoover's provides a list of companies that it considers to be similar to one another. The *Cost of Capital Yearbook* has a list of pure-play companies by SIC code in its appendix.[3] EdgarScan™ lists companies within SIC codes.

STOCK PRICES AND NUMBERS OF SHARES OUTSTANDING

Sources for stock prices are generally different from those for financial statement data. The main reason for this is that the analyst usually relies on the stock prices for the guideline companies on or close to the valuation date, whereas the financial information used might be months prior to the valuation date.[4]

The number of shares used to compute the market value of equity for guideline companies (and for the subject company) should be the number of common shares outstanding net of any Treasury shares on a date nearest the valuation date. Therefore, information on number of shares outstanding should almost always be taken directly from one of the publicly traded company's filings, since the reporting date for the number of shares outstanding may be closer to the valuation date than it is to the company's quarter or year end.[5]

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[3] Ibbotson Associates considers a pure-play company to be one for which 75 percent of its sales fall within a particular one-, two-, three- or four-digit SIC code.

[4] This difference in dates is not a problem from a valuation perspective. The market only has this "old" financial data when it prices companies; therefore, the prices do reflect the information available at the time.

[5] The first page of the 10-K or 10-Q has the number of outstanding shares outstanding (usually net of Treasury shares) as of a later date than the quarter or year end. This later date may be closer to the valuation date.

ADVANTAGES/DISADVANTAGES OF PUBLIC COMPANY DATA

Because of disclosure laws, the universe of publicly traded companies provides a wealth of information on a very large scale (approximately 10,000 public companies from which to draw information). This means:

- the availability of larger potential samples than those from transaction data
- readily available, detailed financial statement and pricing data
- fairly consistent data across companies (i.e., in accordance with GAAP)
- accurate depictions of the financial condition of the firms

ValTip

Some analysts believe that publicly traded companies are much too large to be used as comps in many situations. While this may be true for the smallest of subject companies, such as mom-and-pop operations, small professional practices, or sole proprietorships, there is usually enough size variation among publicly traded companies that they should be considered for most other valuations.

CHARACTERISTICS OF PUBLICLY TRADED COMPANIES

Exhibit 6.1 provides various summary measures for publicly traded companies, demonstrating the wide variety of companies from which to draw data.[6]

Note the small size of most publicly traded companies. In particular, the median (the halfway point) is $90 million in sales; this means that one-half of publicly traded companies have sales of less than $90 million. However, many of these are not actively traded.

Exhibit 6.2 shows the distribution of public companies by size and broad industry classifications.

ValTip

16 percent of all publicly held companies had sales of $10 million or less in the period studied.

With the exception of those divisions where there are few companies in total (A and C) and division H, there are reasonably large groups of companies of all sizes, including the "$10 million and under" category.

[6] This data was obtained from OneSource and represent over 7,000 U.S. companies, with sales and market capitalization of at least $100,000 for the latest 12 months. Mutual funds and certain holding companies are excluded from this group. The data are the most recent available at the beginning of the fourth quarter of 2001.

Exhibit 6.1 Summary Measures for Publicly Traded Companies' Sales

Range (in Millions)	Sales	Assets	Market Cap.
Under $1	2.2%	1.4%	5.6%
$1 to $10	13.8%	11.2%	18.9%
$10 to $25	12.3%	9.4%	11.8%
$25 to $50	12.0%	8.7%	10.9%
$50 to $100	11.5%	10.6%	10.3%
$100 to $250	14.6%	16.0%	11.5%
$250 to $500	9.6%	11.7%	8.9%
$500 to $1,000	8.0%	10.4%	7.6%
$1,000 to $10,000	13.3%	16.2%	11.8%
$10,000 to $100,000	2.7%	4.0%	2.5%
Over $100,000	0.1%	0.5%	0.3%
Summary Statistics (in Millions)			
10th Percentile	$ 5	$ 8	$ 2
25th Percentile	$ 20	$ 32	$ 11
Median	$ 90	$ 161	$ 62
75th Percentile	$ 467	$ 724	$ 395
90th Percentile	$2,020	$2,969	$1,858

Exhibit 6.2 Distribution of Public Companies by Size and Broad Industry Classifications

Sales Range (in Millions)	SIC Divisions: A	B	C	D	E	F	G	H	I	Totals
Under $1	—	7	1	62	15	9	4	—	51	149
$1 to $10	4	48	3	392	53	21	27	4	288	840
$10 to $25	3	24	8	306	50	25	24	139	216	795
$25 to $50	4	27	3	287	36	24	26	214	219	840
$50 to $100	4	17	9	262	46	32	29	221	213	833
$100 to $250	2	34	8	376	86	34	74	198	251	1,063
$250 to $500	4	28	11	233	78	34	70	167	146	771
$500 to $1,000	—	16	9	211	51	34	60	75	109	565
$1,000 to $10,000	2	35	26	377	132	47	91	72	119	901
$10,000 to $100,000	—	11	—	64	38	12	25	109	12	271
Over $100,000	—	1	—	4	1	—	1	30	—	37
Totals	23	248	78	2,574	586	272	431	1,229	1,624	7,065

These divisions, as taken from the 1987 *Standard Industrial Classification Manual*, are:

A. Agriculture, forestry, and fishing
B. Mining
C. Construction
D. Manufacturing
E. Transportation, communications, electric, gas, and sanitary services
F. Wholesale trade
G. Retail trade
H. Finance, insurance, and real estate
I. Services

ValTip

The median asset size is also surprisingly small at $161 million, with 13 percent of all publicly traded companies having assets of $10 million or less.

ValTip

Median equity market capitalization (the total market value of all common equity) is only $62 million. One-quarter of all publicly traded companies have market capitalizations of $11 million or less.

The four-digit SIC codes with the largest total market capitalizations are shown in Exhibit 6.3.[7]

These are slightly different from the top 10 SIC codes shown in Exhibit 6.4 in terms of number of companies.

ValTip

Almost half of all publicly traded companies lost money for the last 12 months on a net income (after-tax) basis. Only about 18 percent of all U.S. companies had net income profit margins of more than 10 percent (see Exhibit 6.5).

Most recent Price/Earnings (P/E; based on net income) multiples (positive P/E only) for public companies are between 5 and 20, with a median of 14.5. Two percent of all companies have P/E multiples of over 100. See Exhibits 6.6 and 6.7.

As shown in Exhibit 6.7, median P/E ratios appear to be highest for service companies, at 20, with the remaining industries, except for mining, hovering in the mid-teens. The number of companies included in A and C may be too small to have high confidence in their medians. Of course, the ranges of P/E multiples, which are not shown here, is very large for each industry group. Furthermore, the relationships shown here will almost certainly change as economic conditions change.

[7] From Market Guide, data as of October 16, 2001, for U.S. companies with sales and market capitalization greater than 0.

Exhibit 6.3 Four Digit SIC Codes with Market Capitalization

SIC Code	Description	Number of Companies	Market Capitalization ($ Millions) Total	Minimum	Maximum
2834	Pharmaceutical Preparations	168	1,220,404.6	0.0	259,452.4
6712	Offices of Bank Holding Companies	680	596,054.3	0.9	68,807.7
4813	Telephone Communications, except Radiotelephone	121	545,352.9	0.0	145,873.5
7372	Prepackaged Software	370	543,331.6	0.0	315,257.5
1311	Crude Petroleum and Natural Gas	159	514,582.8	0.0	286,867.6
6331	Fire, Marine, and Casualty Insurance	66	456,375.3	0.6	225,736.1
3674	Semiconductors and Related Devices	147	438,129.9	0.6	167,930.9
3511	Steam, Gas, and Hydraulic Turbines, etc.	5	383,038.8	4.9	382,193.7
3571	Electronic Computers	46	340,360.3	0.1	176,878.8
5311	Department Stores	14	294,186.5	13.6	237,374.3

Exhibit 6.4 Top 10 SIC Codes with Market Capitalization

SIC Code	Description	Number of Companies	Market Capitalization ($ Millions) Total	Minimum	Maximum
6712	Offices of Bank Holding Companies	680	596,054.3	0.9	68,807.7
7372	Prepackaged Software	370	543,331.6	0.0	315,257.5
6798	Real Estate Investment Trusts	193	147,896.0	0.2	12,497.0
2834	Pharmaceutical Preparations	168	1,220,404.6	0.0	259,452.4
7373	Computer Integrated Systems Design	161	37,661.6	0.0	4,445.9
1311	Crude Petroleum and Natural Gas	159	514,582.8	0.0	286,867.6
7375	Information Retrieval Services	153	172,728.8	0.0	148,839.6
3674	Semiconductors and Related Devices	147	438,129.9	0.6	167,930.9
5812	Eating Places	122	80,879.9	0.0	38,228.5
4813	Telephone Communications, except Radiotelephone	121	545,352.9	0.0	145,873.5

Exhibit 6.5 Net Income Margins

Net Income Margin	Percentage of Companies
Losses	47.7%
0% to 5%	20.3%
5% to 10%	13.5%
10% to 15%	8.2%
15% to 20%	4.9%
20% to 50%	4.6%
Over 50%	0.7%
0.6%	(Median)

Exhibit 6.6 P/E Multiples

Price/ Net Income	Percentage of Companies
Under 5	6.6%
5 to 10	17.5%
10 to 15	28.1%
15 to 20	16.9%
20 to 25	8.3%
25 to 30	6.0%
30 to 50	9.9%
50 to 100	4.5%
Over 100	2.1%
14.5	(Median)

Exhibit 6.7 Median P/E Multiples by SIC

SIC Division	Median P/E	# of Companies
A	11.7	9
B	8.4	170
C	6.2	55
D	16.1	1,198
E	13.8	266
F	14.7	135
G	14.6	241
H	13.7	1,009
I	20.0	488
All	14.5	3,571

CHOOSING GUIDELINE COMPANIES

Understanding the Subject Company

The first step in performing any valuation analysis is to understand the business of the subject company. This includes its main products, clients, markets served, modes of distribution, and so forth. Of equal importance is an understanding of its plans, expected growth, and other factors pertaining to the future. Analysts also look at lines of business, and how important each of the business segments is to the overall company in terms of assets, sales, or profits.

A common difficulty in analyzing larger companies is the presence of more than one distinct line of business. If the subject has one major line of business and a number of other relatively small ones, the value of the overall company will be driven by the major business segment. If, however, the subject comprises numerous business segments that are relatively close in size, then its value is really that of a composite company. Finding comparable companies with similar business lines can be tricky. The valuation professional can try to find companies engaged

primarily in the main business of the subject—sometimes referred to as pure-play companies. In the case where companies have multiple lines of business, it is unlikely that other companies could be found with the same business as the subject. Therefore, pure-play companies in all of the subject's lines of business may have to be considered.[8]

Sources of Information about Potential Guideline Companies

Finding a good set of potential guideline companies is one of the most important yet most time-consuming aspects of implementing the market approach. There are several ways to identify such companies, but no single way that is best for all valuations.

Industry Classifications

Since there are so many publicly traded companies from which to choose, the analyst must develop some way of quickly reducing the set of potential comparable companies. One of the most common ways is to choose companies in the same line(s) of business (or industry) as the subject. Presumably these companies will be affected by many of the same economic and business factors as the subject, and their prices will reflect these influences. This line-of-business criterion is just one way of incorporating the subject company's outlook as well as its business and financial risks into its price. Of course, other characteristics influence price. However, similar business lines is the characteristic that typically is used in the initial screening for potential comparable companies.

A number of data providers categorize the companies on which they carry information by industry. Some have developed their own industry categories; almost all, however, categorize potential companies or transactions by SIC or NAICS codes.[9] The advantage of categorizing potential companies or transactions by these codes is that they are widely used and more uniform than industry assignments made by the vendors.

There are several problems to be aware of when relying on a particular data vendor's industry classification of potential guideline companies:

- Some companies (even relatively small ones) are diversified such that the sales or profits in their listed industry are only a fraction of their overall business. These companies are not pure plays and, unless their mix of business is largely identical to the subject's, they may not be appropriate for the guideline company set.
- While a potential guideline company may have most of its business in one industry, it may have been classified incorrectly. This could be due to simple

[8] Valuing a subject in this way may be more complicated than simply adding the values of the individual business segments. To the extent that there is some diversification benefit from having the particular business mix of the subject, the overall value may be greater than the sum of its parts. This benefit is realized primarily in the reduction of overall business risk, sometimes referred to as a "portfolio effect."

[9] As of this writing, the North American Industry Classification System (NAICS) is not in as wide use as the older Standard Industrial Classification system.

misclassification by the data provider. One common situation involves confusing distribution with manufacturing. For example, some companies that are actually distributors are classified as manufacturers because the data provider has focused on the product being distributed rather than the company's activity.

- Different data providers may place the same company into different industry classifications.

ValTip

Examining detailed business descriptions of the possible guideline companies is an essential step in the analysis. Some data vendors provide good descriptions of a company's business(es); however, they are never more detailed than the data found in a company's 10-K filing.

Subject Company Management

The management of the subject company can be a good starting point to identify potential guideline companies. Often management knows its competition intimately and may be willing and able to supply "insider" financial and pricing information on them. It also may be useful to present the list of publicly traded companies in the industry to the subject company's management to obtain their input on which of these companies might be comparable.

ValTip

One challenge involved with showing such a list to management is that often managers believe their company is "truly unique," and thus, they view none of the publicly traded companies as comparable. It is unlikely that the market niche into which the subject company fits really appreciates some of the nuances that make the subject "truly unique." Unless these nuances result in prospects for the subject that are substantially different from those of the potential guideline companies, those companies usually can be used. On the other end of the spectrum, management may insist that a particular publicly traded company is comparable because they are a competitor. But the division which offers a product or service similar to the subject company may be just one of many larger lines of business.

Other Sources

Professionals who work with the subject company (i.e., accountants and attorneys) and industry experts (who can be contacted through trade associations, commercial

banks, or brokerage firms) also can be good sources of information about the subject company and its competitors. Industry publications or web sites can be good sources of information about potential guideline companies.

FINANCIAL AND OTHER INDICATORS

Much of the time spent in identifying comparable companies revolves around finding firms engaged in the same or similar line of business as the subject. Other factors, however, also should be considered in the initial identification process, which are also intended to help identify potential guideline companies with similar future prospects and business and financial risk characteristics.

Size

ValTip

One of the most important indicators of comparability is size. Size can be expressed in terms of sales, total assets, or market capitalization. Numerous studies have indicated that, on average, smaller companies have lower pricing multiples than larger companies. The main reason for this is that smaller companies typically have more business and financial risk than large companies.[10]

While there have been no detailed studies to specifically identify size-related risk factors, some of the more important ones might be:

- Lack of diversifications in products, customers or geographic areas
- Lack of depth in the management team.

There are many issues to be considered if size will be used to establish comparability. In particular, the size measure to use is often a function of the industry in which the company operates. For service businesses, total revenue is probably the best measure of size. For manufacturing concerns, size might best be captured in the level of total assets.

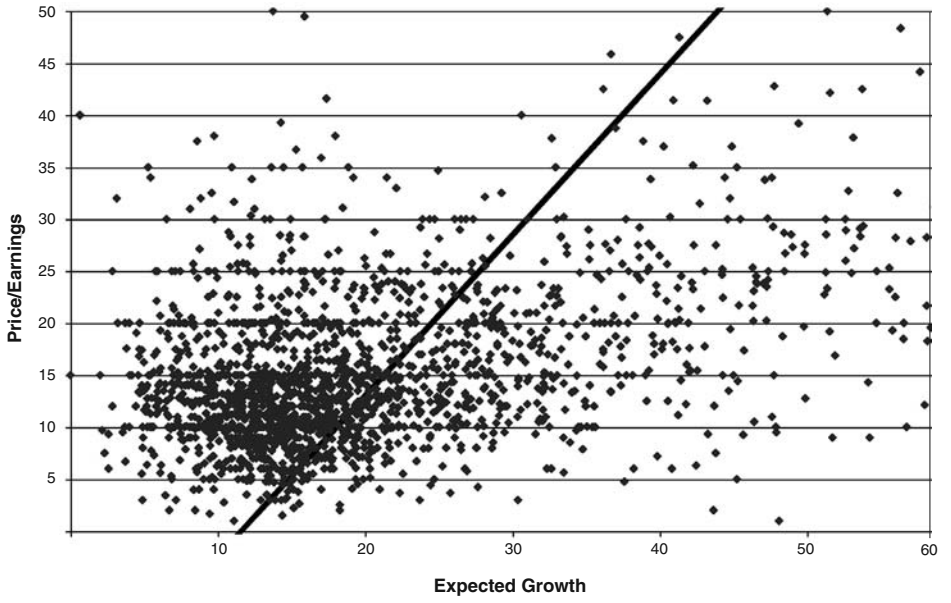
How close must guideline or subject sizes be to be comparable? This will be a matter of judgment and, again, a function of the environment in which the company operates. A $10 million company might not be a good guideline company to use for a $500,000 business; however, it may work well for a $2 million company.

[10] More risk means investors will require a higher rate of return on their investment; and the way to get this is by lowering the price.

Growth

Growth is another very important factor in comparability. It is inextricably connected to value, since expected growth is imputed in the price of a stock. While this relationship is difficult to observe since it is hard to find an "accurate" measure of expected long-term growth for any company (at least as the market perceives it at one point in time), the graph in Exhibit 6.8 shows an observation of this relationship for a date in October 2001.[11]

Exhibit 6.8 Relationship Between Expected Growth and P/E



This graph demonstrates a positive relationship between P/E multiple and expected growth.[12] The fact that this relationship is positive is illuminating given that this data represents companies from a variety of industries, of different sizes, and with other disparate characteristics.

The relationship between historical growth shown in Exhibit 6.9, is not as strong.[13]

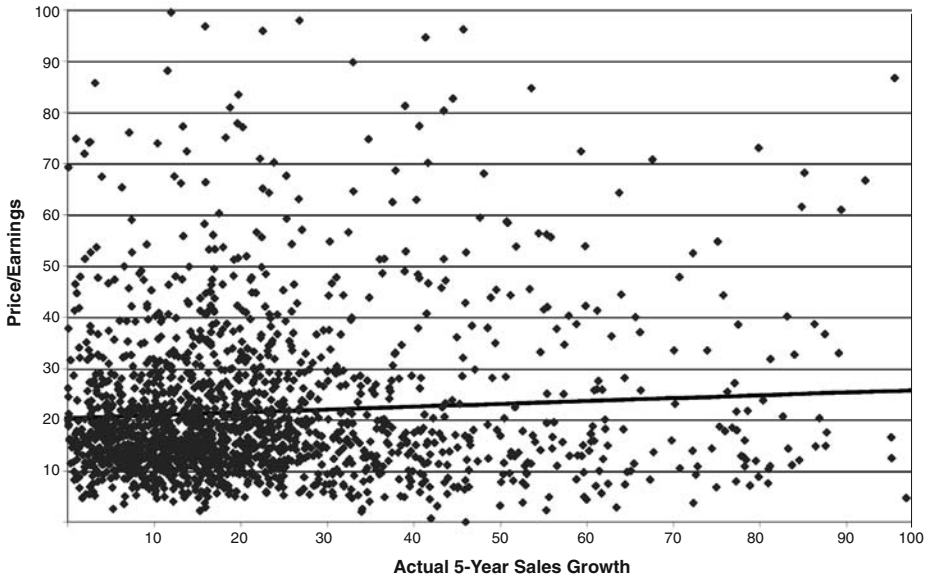
Another observation that can be made from these graphs is how much more important *expected* growth is in the determination of value than is historical growth. Fortunately, this is consistent with valuation theory.

[11] All data are taken from *Market Guide*. P/E is as computed by its authors and the expected growth rate is based on a consensus of sell-side analysts for the next three to five years.

[12] The slope of the line shown is statistically different from zero, with a T-statistic of more than 12, an R^2 of 13 percent and almost 2,000 degrees of freedom.

[13] The T-statistic is about 5 on the slope and the R^2 is only 1 percent.

Exhibit 6.9 Relationship Between Historical Growth and P/E



Other Factors

Profitability of the publicly traded companies also should be considered when selecting guideline companies. For example potential guideline companies with high gross margins may not be as comparable to a subject company with a low gross margin.

Another factor that can affect value is the length of time the business has been operating. Generally, businesses with longer histories tend to have higher pricing multiples than younger companies, because younger companies are generally more risky than more established ones since their prospects are more uncertain.

ValTip

Also at issue is whether trading in a guideline company's stock is sufficiently active to give meaningful and realistic values for that company. While companies with low trading volumes may be very similar to the subject in terms of business and financial characteristics, infrequent trades may not reflect the actual value of the stock so there is no point in using valuation ratios based on these prices.

SAMPLE SIZE MATTERS

A larger group of comparables will reduce the importance of any single guideline company. Since at least one company in any group may be anomalous, having a larger group reduces the effect of this potential anomaly. Furthermore, companies are complex. No one- or two-guideline company(ies) can approximate all of the characteristics of a complex subject. Having a larger group of comparables increases the likelihood that more of the subject's characteristics can be captured.

ValTip

Valuation analysts may have to choose between a very small group of companies whose business descriptions are quite similar to that of the subject or a larger group of companies, some of whose business descriptions are not as good a match.

Even within groups of companies whose business descriptions are nearly identical to the subject's there can be large variations in pricing measures. In certain cases it may be better to choose guideline companies that are close to the subject in size, growth, and profitability but less related in terms of business description than companies that have very similar business descriptions but may differ substantially in terms of size, longevity, etc.

COMPARABLE COMPANIES INFORMATION DATES

After identifying companies in similar lines of business, the analyst also must perform a financial analysis of these companies to determine whether they are good comparables from a financial point of view. To do this properly for valuation purposes, all information used must be as of the valuation date. For example, if the valuation date is June 30, 2002, all of the financial statement data, stock prices, and the like is usually for a period ended no later than this date. Gathering these data can be tricky for older valuation dates, since many data vendors have only the most current data.

BASIC FINANCIAL INDICATORS

Some financial measures that should be included in an analysis for both guideline and subject companies include:

- *Size Measures*. These include the magnitude of sales, profits, total assets, market capitalization, and total invested capital. Given how size may affect value, at least one, if not all, of these should be included.
- *Historical Growth Rates*. Consider growth in sales, profits, assets, or equity. The time period over which to measure this growth is important and is discussed later.

- *Activity Ratios*. Examples are the total assets and inventory turnover ratios. Depending on the type of business being analyzed, other ratios also may be important.
- *Measures of Profitability and Cash Flow*. Consider the four most common measures:

  1. Earnings before interest, taxes, depreciation and amortization (EBITDA)
  2. Earnings before interest and taxes (EBIT)
  3. Net income
  4. Cash flow

Using concepts such as EBIT and EBITDA can be useful because they can reflect the economics of the business better than net income and cash flow, which are very much influenced by both the company's tax planning and its choice of capital structure.

- *Profit Margins*. The level of profits is probably less important than the ratio of profits relative to some base item—usually sales, assets, or equity.
- *Capital Structure*. It is essential to use some measures derived from the current capital structure. The most common measures are the values of outstanding total debt, preferred stock (if it exists), and the market value of common equity, since book equity generally has very little to do with how stock investors view their relative position with a company. The ratio of debt to market value of equity should be included since this represents the true leverage of the company.

The debt number used should be its market value; however, on a practical basis, most analysts simply use the book value of the debt as a proxy for market value.

- *Other Measures*. These will be a function of what is important in the industry in which the subject company operates. For example, value drivers for retailers are inventory turnover; for banks, loan/deposit ratios; and for hospitals, revenue per bed and length of stay.

DISPLAYING THE INFORMATION

Once the key items have been chosen, the next step is to put the information into a usable format. The goal should be to display these data in a way that makes comparisons easy. So that comparisons are meaningful, the concepts must be consistent across companies. Furthermore, the financial information for the subject company should be shown in a consistent format. One of the advantages of getting the data from electronic providers is that they try to standardize concepts across companies.

Exhibit 6.10 is an example of what such a presentation of standard financial indicators might look like for public companies.

Exhibit 6.10 Presentation of Standard Financial Indicators

Guideline Company	$ Millions: Tangible Assets	$ Millions: Total Assets	Employees	Amounts in $ Millions: Sales	Gross Profit	EBITDA	EBIT	Pretax Income	Net Income
Company 1	72.4	74.0	315.0	64.8	33.5	4.5	3.8	4.0	2.5
Company 2	40.2	51.5	353.0	62.0	42.4	9.5	7.0	5.8	3.3
Company 3	35.2	47.4	246.0	55.5	27.3	4.5	3.8	0.8	0.5
Company 4	44.4	52.0	361.0	54.3	26.5	6.0	4.5	4.7	3.1
Company 5	33.4	36.8	121.0	36.7	22.9	12.1	10.7	4.9	2.9
Company 6	25.5	36.3	206.0	31.0	10.7	1.4	0.9	0.1	(0.1)
Company 7	20.7	20.7	134.0	27.5	17.3	1.3	0.8	1.0	1.1
Company 8	26.5	29.8	100.0	21.3	8.0	4.2	1.9	2.3	1.2
Company 9	12.3	13.3	117.0	17.1	7.3	1.7	1.2	0.9	0.5
25th Percentile	25.5	29.8	121.0	27.5	10.7	1.7	1.2	0.9	0.5
Median	33.4	36.8	206.0	36.7	22.9	4.5	3.8	2.3	1.2
75th Percentile	40.2	51.5	315.0	55.5	27.3	6.0	4.5	4.7	2.9
Subject Company	**3.6**	**4.1**	**29.0**	**5.2**	**2.5**	**0.5**	**0.4**	**0.4**	**0.3**

	Long-Term Growth							
Company	Sales	Gross Profit	EBITDA	EBIT	Pretax Income	Net Income	Assets	Shrhld. Equity
Company 1	17.9%	21.3%	36.0%	40.6%	51.6%	58.4%	32.2%	46.6%
Company 2	18.6%	18.7%	34.4%	36.9%	58.5%	33.7%	18.3%	8.2%
Company 3	17.0%	14.2%	-0.9%	4.9%	-0.4%	-36.6%	15.8%	11.2%
Company 4	10.5%	10.8%	22.8%	23.6%	28.4%	28.6%	17.3%	25.4%
Company 5	49.1%	55.1%	66.4%	67.2%	76.2%	75.2%	42.7%	47.0%
Company 6	40.3%	35.2%	31.0%	32.9%	25.8%	23.0%	28.1%	21.5%

(*continues*)

Exhibit 6.10 *continued*

	Long-Term Growth							
Company	**Sales**	**Gross Profit**	**EBITDA**	**EBIT**	**Pretax Income**	**Net Income**	**Assets**	**Shrhld. Equity**
Company 7	13.3%	12.6%	-4.9%	-7.8%	-4.1%	5.3%	9.3%	8.5%
Company 8	5.2%	-2.7%	-5.5%	-12.1%	16.0%	13.1%	4.0%	5.0%
Company 9	18.7%	18.1%	14.9%	14.6%	26.8%	13.9%	11.1%	11.4%
25th Percentile	13.3%	12.6%	-0.9%	4.9%	16.0%	13.1%	11.1%	8.5%
Median	17.9%	18.1%	22.8%	23.6%	26.8%	23.0%	17.3%	11.4%
75th Percentile	18.7%	21.3%	34.4%	36.9%	51.6%	33.7%	28.1%	25.4%
Subject Company	**4.4%**	**2.2%**	**19.2%**	**20.0%**	**25.0%**	**16.7%**	**-2.2%**	**-2.6%**

	Latest 12 Months Margins (% of Sales)					Long-Term Margins (% of Sales)				
Company	**Gross Profit**	**EBITDA**	**EBIT**	**Pretax Income**	**Net Income**	**Gross Profit**	**EBITDA**	**EBIT**	**Pretax Income**	**Net Income**
Company 1	51.7%	6.9%	5.9%	6.2%	3.9%	52.4%	12.5%	11.2%	10.5%	7.5%
Company 2	68.4%	15.3%	11.3%	9.4%	5.3%	69.0%	12.9%	9.7%	5.9%	4.0%
Company 3	49.2%	8.1%	6.8%	1.4%	0.9%	55.5%	12.2%	10.1%	6.5%	6.6%
Company 4	48.8%	11.0%	8.3%	8.7%	5.7%	48.9%	11.2%	9.0%	9.2%	6.2%
Company 5	62.4%	33.0%	29.2%	13.4%	7.9%	55.6%	0.0%	0.0%	10.8%	6.4%
Company 6	34.5%	4.5%	2.9%	0.3%	-0.3%	40.5%	9.6%	7.6%	8.0%	4.6%
Company 7	62.9%	4.7%	2.9%	3.6%	4.0%	66.8%	7.1%	5.1%	6.1%	4.7%
Company 8	37.6%	19.7%	8.9%	10.8%	5.6%	50.4%	33.9%	25.6%	19.7%	11.8%
Company 9	42.7%	9.9%	7.0%	5.3%	2.9%	42.5%	9.4%	6.8%	4.6%	3.0%

25th Percentile	42.7%	6.9%	5.9%	3.6%	2.9%	48.9%	9.6%	7.4%	6.1%	4.6%
Median	49.2%	9.9%	7.0%	6.2%	4.0%	52.4%	11.7%	9.4%	8.0%	6.2%
75th Percentile	62.4%	15.3%	8.9%	9.4%	5.6%	55.6%	12.6%	10.4%	10.5%	6.6%
Subject Company	**48.1%**	**9.6%**	**7.7%**	**7.7%**	**5.8%**	**46.9%**	**9.0%**	**7.3%**	**7.1%**	**5.5%**

Company	Sales/ Assets	Curr. Ratio	Quick Ratio	W/C / Sales	Inv. Turn.	Total Debt ($ Mil.)	Comm. Equity ($ Mil.)	Debt/ Equity
Company 1	0.9	2.9	2.4	0.7	3.4	3.1	47.0	0.1
Company 2	1.2	2.8	1.6	0.4	2.5	12.8	28.5	0.4
Company 3	1.2	2.4	1.4	0.3	2.4	8.6	32.2	0.3
Company 4	1.0	5.9	3.9	0.6	2.8	1.8	43.7	0.0
Company 5	1.0	2.9	2.2	0.3	3.8	3.7	19.9	0.2
Company 6	0.9	1.7	0.8	0.2	2.2	7.3	21.1	0.3
Company 7	1.3	4.0	2.6	0.5	2.9	0.1	16.1	0.0
Company 8	0.7	7.6	4.4	0.7	2.2	—	26.2	—
Company 9	1.3	2.2	1.0	0.3	2.5	4.2	7.1	0.6
25th Percentile	0.9	2.4	1.4	0.3	2.4	1.8	19.9	0.0
Median	1.0	2.9	2.2	0.4	2.5	3.7	26.2	0.2
75th Percentile	1.2	4.0	2.6	0.6	2.9	7.3	32.2	0.3
Subject Company	**1.3**	**3.9**	**3.1**	**0.6**	**2.0**	**—**	**3.8**	**—**

Several things of note in this example of a guideline company analysis make establishing comparability easier.

- The income data are for the latest 12 months (LTM) (prior to the valuation data) and the balance sheet data are for the most recent quarter (prior to the valuation date).
- A number of size measures are shown; however, only one or two are really necessary to help establish comparability. The others are used to develop valuation ratios.
- The remaining measures are independent of size, making them meaningful to compare across companies.
- There are summary statistics for each data series. In this case the 25th, Median, and 75th percentiles are shown.[14] Other summary measures that could be used include different percentiles (such as the 10th and the 90th) as well as a simple average of the companies and a composite of the companies.

ValTip

Using percentiles rather than simple averages or composites provides a range of values and protects the information from the effects of outliers.

- Outliers could indicate an anomalous situation for an industry or company. These apparent anomalies should usually be analyzed because they may contain important information about trends in an industry.
- Profitability ratios are computed using both the most recent data and information over the last five years.
- The last part of the table gives other operating ratios and indications of the capital structure.

Typical periods for which short-term and long-term ratios are computed include:

- Latest 12 months (LTM) prior to the valuation date
- Latest fiscal year prior to the valuation date
- Latest three to five years prior to the valuation date
- A complete business cycle

One of the problems with using either the latest 12 months' or latest fiscal year's data is that results can be significantly affected by a one-time, nonrecurring

[14] The 25th percentile is the value below which are 25 percent of the values in the group. For example, using the above information, 25 percent, or two, of the companies have latest returns on EBIT as a percent of sales of less than or equal to 5.9 percent. The median is simply the 50th percentile; half of the values for that concept are above the median and half are below.

event (e.g., a large but temporary increase in the price of raw materials that cannot be passed on to customers). Computing ratios over a longer period of time, such as three to five years, reduces the importance of these types of events. However, since the focus of the valuation analysis is prospective, they should not be overemphasized if they are not expected to recur. To the extent that the company's business is cyclical, a three- to five-year period may pick up only the upward or downward portion of that cycle and give an incorrect indication of what is likely to happen in the future.

Rarely are any of these measures given exclusively. Usually data for multiple periods are shown alongside one another. In establishing comparability, longer-term measures are often as important as shorter-term measures, although long-term ratios (e.g., pricing multiples based on average earnings over a three- or five-year period) are sometimes given less weight.

ValTip

When preparing an analysis of controlling guideline company transactions, there is usually much less data available. In particular, usually there are no data on which to compute growth rates or long-term margins. This lack of information might limit the confidence in the results obtained from this method.

ADJUSTMENTS TO THE GUIDELINE AND SUBJECT COMPANIES

Before actually comparing the companies, some adjustments to the data may have to be made. Publicly-traded companies tend to need fewer of these adjustments than privately held firms. To the extent that there are certain accounting changes or nonrecurring events reflected in the companies' numbers, or the companies use different accounting methods, the financial data will need to be adjusted so all company financial data is analyzed on a similar basis.

INCOME ADJUSTMENTS

A number of adjustments may have to be made to the subject company's income statement. While not exhaustive, the following discussion introduces some of the more common adjustments.

Nonoperating Income/Expense

Nonoperating income or expense items should be removed from the financial statements of the subject company because publicly traded guideline companies typically will not have a large number of nonoperating items, and their prices will not reflect the risk related to them.

Nonoperating income or expenses can arise in several ways including investments in unrelated businesses and assets, and income on excess working capital. Probably the most accurate way to handle this is to subtract the income or expense from the overall income of the subject company, apply the appropriate ratios, and add the value of the asset or liability that is giving rise to the nonoperating income or expense. If the nonoperating income comes from marketable securities, this is a very simple process. If it comes from real estate or another operating entity, a separate appraisal may have to be performed.

Example: A privately held company manufactures electronic medical instruments. It has a significant amount of excess cash that it has invested in high-grade corporate bonds. The risk characteristics of the company's main business are much different from those of the corporate bonds. To apply pricing ratios derived from guideline companies holding small amounts of excess cash to the overall income of the subject would misstate its value.

Assumptions:

Nonoperating portfolio of high-grade corporate bonds = $10,000,000 (par and market)
Coupon rate of bonds = 5 percent
Company's pretax income (excluding the interest payments on the bonds) = $1,000,000
Guideline companies' average pretax price-to-earnings ratio = 12

Value of Subject Including Bond Income of $500,000

Total pretax income	$ 1,500,000
Price/Pretax Earnings	× 12
Value of Subject	$18,000,000

Value of Subject Excluding Nonoperating Bond Income

Total pretax income	$ 1,000,000
× Price/Pretax Earnings	× 12
= Operating Value	$12,000,000
+ Value of Bonds	$10,000,000
= Value of Subject	$22,000,000

These calculations show the substantial difference in values. There should be no doubt that the first of these is incorrect. The required rate of return implied by the valuation multiple is too high for the operating business and the nonoperating assets (the low risk corporate bond); therefore, the first of these two calculations understates the overall value of this company.

Owners' Compensation

It is not uncommon in small, privately held companies that owners receive compensation in excess of what their duties would command in larger, publicly traded firms or if they were employees. This "excess" compensation is really not compensation; rather, it can be viewed as a return of or on capital. In publicly traded com-

panies, this return of or on capital comes in the form of a dividend or an increase in the value of the stock, and the income-based stock multiples of publicly traded companies reflect this. For the closely held company to be reported and analyzed on the same basis as the publicly traded guideline companies, this "excess" compensation can be removed from its costs and treated the same way it is in publicly traded companies. The same theory holds if an owner's compensation is less than what his or her duties would command in a publicly traded company; the additional compensation (needed to bring the owner's pay up to a "market level") could be added to the subject company's costs. This concept applies to a controlling interest. Many valuation professionals, when valuing a minority interest, do not make these compensation adjustments since the minority shareholder cannot change the compensation policy in the company. However, it is possible a minority shareholder could sue to force a reduction of the controlling shareholders' compensation.

Of course, determining what is "excess" compensation can be difficult. Salary surveys can be used; yet many owners perform multiple duties, making direct comparisons with managers of publicly traded companies difficult. In addition, some of an owner's compensation may come in the form of perquisites whose values might be difficult to quantify.

Taxes

Another common difference between publicly traded companies and closely held firms is that many times the latter do not pay taxes at the corporate level because they are partnerships or S corporations. This tax difference is reflected in net income and cash flow that appears higher than that of their tax-paying, publicly traded counterparts.

There are two main schools of thought on how to adjust for this matter. One school holds that flow-through entities are worth more than taxpaying organizations simply because there is more cash available to distribute to shareholders. The other school asserts that partnerships and Subchapter S corporations are not worth more than otherwise similar C corporations because there is no market evidence to prove they have higher values. Higher levels of distributable cash can be offset by the tax burden on minority shareholders from income that may never be distributed to them. Valuation analysts in the latter group decrease the flow-through entity's income and cash flows for taxes before applying any value ratios. See Chapters 23 and 24 for a more detailed discussion of this issue.

Nonrecurring Items

The issues associated with nonrecurring items are similar to those of nonoperating items, and they will need to be similarly eliminated from consideration. This area is likely to affect publicly traded companies as well as privately held ones.

BALANCE SHEET ADJUSTMENTS

Unlike the income statement, the balance sheet usually requires fewer adjustments. Since most valuation ratios are based on income or cash flows, these adjustments usually are less crucial to the overall value.

Nonoperating Assets/Liabilities

The balance sheet should be adjusted to remove the non-operating assets and liabilities and will require a commensurate adjustment on the income statement.

Inventories

Inventories of all of the guideline companies and of the subject should be reported using the same accounting method: either LIFO or FIFO. As more companies demand just-in-time inventories, this may be less of an issue.

Debt and Working Capital

Adjustments for debt and working capital are perhaps the most difficult and important adjustments the analyst must make to the balance sheet. Two issues must be addressed here:

1. Actual level of "long-term" debt
2. Whether the company has sufficient or excess working capital

Long-Term versus Short-Term Debt

The term "long-term" debt refers to debt that is part of the capital structure, that is, the permanent long-term funding of the company. What is listed as "long-term debt" on the balance sheet may be only a small portion of this permanent funding. For a number of reasons, a business may choose short-term or floating rate debt rather than long-term, fixed-rate debt. This may be a choice based on the company's belief that rates will remain stable or fall in the future. Since short-term funding can be cheaper than longer-term debt, it can save a company substantial money. Or it may be based on the company's inability to obtain long-term funding. Either way, this type of short-term debt is often treated as part of the capital structure.

An indication that short-term debt is really part of the capital structure can be obtained from company management or by reviewing changes in short- and long-term debt over time. For example, if long-term debt is being replaced by short-term debt and the overall level of debt is not falling, then this new debt is probably long-term debt disguised as short-term funding. If long-term assets (e.g., property, plant, and equipment) are increasing and this increase is being matched by an increase in short-term debt, then this new debt probably is going to be permanent and should be treated as such. If working capital is negative or low relative to that of the guideline companies, this fact may indicate that some of the short-term debt is not being used to support working capital needs and should be considered permanent funding.

Excess versus Sufficient Working Capital

The level of working capital can require adjustment as well. Normally one assumes that the publicly traded guideline companies do not have excessive levels of working capital, since investors tend to frown on this. However, it is not uncommon for privately held companies to have high levels of cash, marketable securities, or other short-term liquid investments.

ValTip

> Excess working capital can be identified by comparing the working capital ratio of the subject to those of the guideline companies or by comparisons to industry norms.

Income related to this excess can be eliminated from the subject company's financial statements, and the market value of the assets can be added to the indication of value obtained from applying the guideline company valuation multiples. For example, in the case of cash, there is very little income from it, but the excess amount must be added to the value of the subject company simply because the guideline company multiples may not anticipate that level of cash.

In addition, the issue of working capital is intimately involved with that of long-term debt. Because of this interdependence, it is often a difficult adjustment to make. While it would be better if there were true working capital "norms" to which the subject company could be compared, this is often not the case. As shown earlier, the ranges of financial ratios for similar publicly traded companies are often wide. Because of this, the analyst will have to exercise judgment in making these adjustments.

EFFECTS OF ADJUSTMENTS ON VALUE

ValTip

> The analyst should be aware that making certain changes can change the character of the resulting value—many times from a noncontrol to a control value.

Numerous analysts believe that adjusting excessive owners' compensation downward and then applying publicly traded company multiples to the resulting income amounts gives a controlling, marketable value. The obverse of this also justifies such an assertion. That is, *not* making this type of adjustment, when there is an issue of excess compensation, implies a minority position, since a minority shareholder cannot force a change in owner's compensation. The appraiser must use judgment when making these types of adjustments and applying either transaction-based or public company–based multiples. In some cases a discount or premium may still be required.

CONCLUDING REMARKS ON CHOOSING COMPARABLES

The process for choosing guideline companies can be summarized as:

- Using a variety of data sources, compile a list of companies in the same or similar industry as the subject company.

- Review the detailed business descriptions of these companies and eliminate those that are dissimilar to the business of the subject company.
- Eliminate companies whose financial characteristics are not similar to the subject. Two of the most important characteristics are absolute size and growth potential.
- Collect detailed financial information (both historical and prospective, if available) about each of the potential guideline companies, placing the data in a format that is consistent across all companies, and include the same information for the subject company.
- Make any necessary adjustments to the guideline companies and the subject company.

ValTip

The quality and quantity of the publicly traded company information will affect the confidence one places in the results from the guideline public company method of the market approach.

CALCULATING STANDARD PRICING MULTIPLES

A pricing multiple (also known as pricing ratio, valuation multiple, or valuation ratio, among other terms) relates the value of a company to some balance sheet or, more often, income statement item. It is a way of scaling values, allowing the valuation professional to use pricing information from companies of different sizes. For example, as of October 2001, both Utek Corp. (ticker: UTOB) and Exxon Mobil Corporation (ticker: XON) had price/earnings ratios of around 15, but Exxon was 40,000 times the size of Utek in terms of sales.

Pricing multiples provide some insight into what investors are willing to pay for a certain level of sales, income, and assets. For example, a price/earnings multiple of 18 implies that investors are willing to pay 18 times earnings for the stock of the company. Of course, this number incorporates some expectations about future earnings growth, along with a reasonable return on investment.

While all pricing multiples have "price" in their numerators, "price" is not always defined in the same way. The price definition used depends on whether the market value of shareholders' equity (MVEq) or the market value of invested capital (sometimes abbreviated MVIC) is used.

EQUITY VERSUS INVESTED CAPITAL

Equity and invested capital are two different facets of the ownership of a company. The latter is sometimes called the business enterprise value, meaning that it represents all claims on the cash or earnings of the business.

The market value of equity is simply the number of all outstanding common stock multiplied by its market price. If there is more than one class of common stock, equity is the sum of the values of all of the classes. Preferred stock may be

added here as well.[15] MVIC is equal to the market value of equity plus the market value of all interest-bearing debt that is part of the capital structure (however that is determined).

One way to incorporate the market value of debt into MVIC is simply to use its book value. This is usually accurate for short-term debt items; it may, however, result in some misstatements on longer-term items. The market value of longer-term debt may be of concern if it represents a significant portion of the capital structure and if current market interest rates on comparable debt (comparable in credit quality, payment characteristics, and maturity) are significantly higher or lower than the rate on the subject debt. Where prices on the traded debt of publicly traded companies cannot be easily obtained, they can be estimated using the information available in the companies' 10-Ks. Nontraded debt also can be estimated using this information.

The value of preferred stock may or may not be included here, depending upon whether it is included in equity. Usually preferred stock is such a small part of a public company's capital structure that its treatment is immaterial.

ValTip

The choice of whether to use MVEq or MVIC is a function of both the purpose of the valuation and the capital structures of the subject and guideline companies, and the analyst's preference.

If the purpose of the valuation is to determine a controlling interest value, then MVIC may be the better measure of price since a controlling buyer is interested in the entire business, irrespective of its capital structure. For minority positions, the market value of equity can be the price concept. Of course, the choice between price terms based on the purpose of the valuation is often a presentation issue; it is a simple matter to convert MVIC to the MVEq and vice versa. The more important reason an analyst has to choose between them is to reconcile the capital structures of the guideline companies and the subject.

ValTip

The term "capital structure" refers to the relationship between the market values of debt and equity, never the book value of equity.

[15] Preferred stock can be considered equity-like or debt-like. How it is incorporated is a function of the characteristics of the particular issue(s).

Two common ways to express the capital structure are by using either debt divided by MVEq or debt divided by MVIC. If the capital structures of the guideline companies and that of the subject are similar, then either measure of price can be used. If the capital structures are considerably different, using the valuation ratio based on MVIC might be better.

FINANCIAL STATEMENT MEASURES

The second part of the pricing multiple is the denominator, the financial statement parameter that scales the value of the company. The four general groupings of valuation ratios, include those based on:

1. Revenues
2. Profitability or cash flows
3. Book values
4. Some other measure

Some specific common measures include:

- Revenues
- Gross profit
- EBITDA
- EBIT
- Debt-free net income (net income plus after-tax interest expense)
- Debt-free cash flows (debt-free net income plus depreciation/amortization)
- Pretax income
- Net after-tax income
- Cash flows
- Asset related
  - Tangible assets
  - Book value of equity
  - Book value of invested capital (book value of equity plus debt)
  - Tangible book value of invested capital (book value of equity, less intangible assets, plus book value of debt).
- Employees

ValTip

In theory, the best denominator to use is based on expectations (i.e., using next year's expected revenues or income). It is an appropriate match with the numerator, since the value of equity or invested capital is a prospective concept, containing the market's best assessment of the prospects for the future.

In practice, the denominator usually is based on the most recent 12 months' or latest fiscal year's historical information prior to the valuation date for income state-

ment–based multiples and the most recent observation prior to the valuation date for the balance sheet–based multiples. Often the presumption in using these recent values is that the near future will be similar to the current period. If, however, the company's performance has been volatile and this latest period is either especially high or low relative to what is expected, then a longer-term (three-, four-, or five-year) average might be appropriate. It also may be appropriate to use a multiple of next year's parameters, which are obtained from analyst forecasts.

The analyst must choose those ratios that are appropriate for that type of business being valued. The advantage of using net income is that it is a very popular measure. Most quoted price/earnings multiples are based on net income. Equity analysts, however, look beyond this widely available statistic. A more useful version of net income is net income before extraordinary items; most investors recognize that extraordinary income or expenses will not recur and price the stock accordingly.

The advantages of using EBIT or EBITDA are that they more closely reflect the operations of the business, and they exclude the nonoperating, financing (capital structure), and tax planning (and depreciation policies for EBITDA) aspects that are part of net income. If the capital structures, tax situations, and non-operating characteristics of the guideline companies and subject company were similar, then it would probably make little difference whether EBIT, EBITDA, or net income were used in the valuation multiple. But because these things can vary widely among companies, it is certainly important to consider these measures along with, or in many situations, as a replacement for net income.

While it is often tempting to use the same set of multiples to value all companies, doing so is not consistent with the way investors make decisions. There are a number of sources of information on what appropriate multiples might be.

- *Industry.* Investors within an industry tend to look at the same multiples when making investment decisions and can give the analyst the best indication of which value measures are most important. Articles in trade journals and the financial press that discuss recent acquisitions often mention the types of multiples that investors rely upon. For example, many acquisitions of manufacturers are discussed in terms of P/Es or price to some form of cash flows. In bank acquisitions, price/book equity (sometimes referred to as market/book) is very important. In service businesses, prices/sales may be important. Hospitals sometimes are priced on a revenue-per-bed basis. It is not unusual for an industry to have more than one key valuation multiple.

Overall, EBITDA and EBIT multiples tend to be frequently used across many industries.

- *Subject Company.* The appropriate multiples to use in the valuation analysis may be dictated by the particular situation of the subject company. For example, if the key valuation multiple for the industry appears to be price to earnings (where

earnings are net income) and the subject company has not had and is not expected to have positive earnings for the next year or two, valuing it using the standard P/E multiple would result in a nonsensical (negative) value. A better choice might be to use a different definition of earnings or a different valuation measure altogether. Furthermore, if a reading of industry literature does not yield good information on how companies are usually valued, then the management of the subject company may be a good source of guidance.

While rules of thumb seldom should be used as the sole way of valuing a business, they can offer insight into the way investors view the industry.

- *Rules of Thumb*. Most rules of thumb have been developed over time as a result of actual transactions. Rules of thumb are usually quoted as a multiple of some financial measure such as 1.5 times operating cash flow or 2 times revenues. These measures are too broad to be of much use in valuing a company as there is no agreed upon definition for the financial measures used, but they can be helpful in two ways. The financial measure used in the pricing definition (e.g., operating cash flow) is an indicator of the measures that investors look at so the analyst may include it in the calculation of the valuation ratios. Rules of thumb can also serve as a test of the reasonableness of the valuation conclusion. If the Rule of Thumb in an industry is 2 times earnings and the valuation conclusion is 12 times earnings, the analyst should try to reconcile the two measures.

COMPUTATION OF MULTIPLES

The calculations of the various valuation multiples are relatively simple. One takes the price, which is either the market value of equity or of invested capital as of the valuation date, and divides it by the appropriate financial statement parameter, computed over the appropriate time period:

$$\text{Multiple} = \frac{\text{Price}}{\text{Parameter}}$$

One approach is to calculate everything on a per-share basis first and then calculate the valuation ratios. Alternatively, these ratios can be computed on a "gross" basis, using aggregate market values, since the number of shares is eliminated from both the numerator and denominator. For example, price/earnings can be calculated by dividing the price of a share of stock by the most recent earnings per share (the per-share approach) or by dividing the latest market value of equity by the last 12 months' earnings (the gross basis approach).

ValTip

Negative valuation multiples, which usually arise from losses, are not meaningful and should be ignored.

MATCHING PRICE TO PARAMETER

Conventionally, "price" is matched to the appropriate parameter based on which providers of capital in the numerator will be paid with the monies given in the denominator. For example, in price/EBIT, price is MVIC, since the earnings before interest payments and taxes will be paid to both the debt and equity holders. In price/net income, price is the market value of equity only, since net income is after interest payments to debt holders and represents amounts potentially available to shareholders. Any denominators that exclude interest (e.g., EBIT or EBITDA) should usually be matched with its corresponding numerator (e.g., MVIC).

MVIC is usually the numerator for:

- Revenues
- EBITDA
- EBIT
- Debt-free net income
- Debt-free cash flows
- Assets
- Tangible book value of invested capital

MVEq is usually paired with:

- Pretax income
- Net income
- Cash flow
- Book value of equity

Example: Exhibit 6.11 is the remainder of the example (Exhibit 6.10) shown earlier, giving the market values of equity along with the pricing multiples.

DISPERSION OF PRICING MULTIPLES

The coefficient of variation is a useful statistic for analyzing multiples. It measures the dispersion of the data relative to its average value. The higher the coefficient of variation, the larger the range of pricing multiples. For example, in Exhibit 6.11, price/EBITDA, which ranges from 3.8 to 15.6, has a much lower coefficient of variation than price/net income, with a low of 10.2 and a high of 112.2.

The coefficient of variation is computed by dividing the standard deviation of the set of data by its average value. The coefficient of variation can be used to com-

Exhibit 6.11 Pricing Multiples

	($ Millions)			MVIC/				MVEq/		
	Market Value of		Debt/					Pretax	Net	Book
Company	Equity	Inv. Cap	MVEq	Empl.	Sales	EBITDA	EBIT	Income	Income	Value
Company 1	42.3	45.4	0.1	144	0.7	10.1	11.9	10.6	16.9	0.9
Company 2	33.7	46.5	0.4	132	0.8	4.9	6.6	5.8	10.2	1.2
Company 3	56.1	64.7	0.2	263	1.2	14.4	17.0	70.1	112.2	1.7
Company 4	55.3	57.1	0.0	158	1.1	9.5	12.7	11.8	17.8	1.3
Company 5	64.6	68.3	0.1	565	1.9	5.6	6.4	13.2	22.3	3.2
Company 6	6.7	14.0	1.1	68	0.5	10.0	15.6	67.0	—	0.3
Company 7	20.2	20.3	0.0	152	0.7	15.6	25.4	20.2	18.4	1.3
Company 8	16.0	16.0	—	160	0.8	3.8	8.4	7.0	13.3	0.6
Company 9	10.1	14.3	0.4	122	0.8	8.4	11.9	11.2	20.2	1.4
25th Percentile	16.0	16.0	0.0	132	0.7	5.6	8.4	10.6	16.0	0.9
Median	33.7	45.4	0.1	152	0.8	9.5	11.9	11.8	18.1	1.3
75th Percentile	55.3	57.1	0.4	160	1.1	10.1	15.6	20.2	20.7	1.4
Coefficient of Variation				0.8	0.4	0.4	0.5	1.1	1.2	0.6

pare the dispersions of a series of numbers, whether or not they are of similar magnitudes. In the table in Exhibit 6.11, the price/revenue multiples are much lower than the price/net income multiples, yet their coefficients of variation can be compared directly.

If the companies in the guideline group are viewed similarly by the market, then the key valuation indicator(s) used by the market to price their stocks also should be similar. The coefficient of variation can help the analyst to find this (these) key valuation indicator(s). In the table in Exhibit 6.11, the companies' price/sales, price/EBIT, and price/EBITDA are fairly close to one another and have a lower coefficient of valuation, suggesting that sales, EBIT, and EBITDA might be the main indicators considered by the market when it sets prices for these types of companies. Groups of companies in different industries will have different pricing multiples that are important. This type of analysis could be used in conjunction with a knowledge of what professionals in the industry consider to be important drivers of value.

APPLYING THE VALUATION MULTIPLES

The final step in guideline company analysis is to apply the valuation multiples to the subject company. At this point, the companies that remain in the guideline company set are usually ones that should be reasonably comparable to the subject.

The table in Exhibit 6.12 shows the equity values (for 100 percent of the equity in the subject) using the pricing multiples given above and applies them to the appropriate financial variables for the subject company (all amounts are in millions of dollars).

Clearly the range of equity values for the subject is quite large—from $1.2 million to $33.7 million. However, the range of values based on the median pricing multiples is very small—from 4.2 to 5.4.[16]

Exhibit 6.12 Equity Values ($Millions)

	MVIC/			MVEq/		
Company	Sales	EBITDA	EBIT	Pretax Income	Net Income	Book Value
Company 1	3.6	5.1	4.8	4.2	5.1	3.4
Company 2	4.2	2.5	2.6	2.3	3.1	4.5
Company 3	6.2	7.2	6.8	28.0	33.7	6.6
Company 4	5.7	4.8	5.1	4.7	5.3	4.8
Company 5	9.9	2.8	2.6	5.3	6.7	12.3
Company 6	2.6	5.0	6.2	26.8	—	1.2
Company 7	3.6	7.8	10.2	8.1	5.5	4.8
Company 8	4.2	1.9	3.4	2.8	4.0	2.3
Company 9	4.2	4.2	4.8	4.5	6.1	5.4
25th Percentile	3.6	2.8	3.4	4.2	4.8	3.4
Median	4.2	4.8	4.8	4.7	5.4	4.8
75th Percentile	5.7	5.1	6.2	8.1	6.2	5.4

[16] Note that this tight a range is not always the case.

For equity values based on MVIC pricing multiples, the calculation is (sales is used here as the concept):

$$\text{Equity Value}_{\text{Subject}} = \left[\left(\frac{\text{MVIC}}{\text{Sales}_{\text{comp}}} \times \text{Sales}_{\text{Subject}}\right) - \text{Debt}_{\text{Subject}}\right]$$

Using the sales multiple from Company 1 (Exhibit 6.11) and applying them to the sales of the subject gives us:

$$\text{Equity Value}_{\text{Subject}} = 0.7 \times 5.2 - 0.0 = 3.6 \text{ (rounded)}$$

For equity values based on the MVEq pricing multiples, the calculation is (net income is used here as the concept):

$$\text{Equity Value}_{\text{Subject}} = \frac{\text{MVEq}}{\text{Net Income}_{\text{comp}}} \times \text{NetIncome}_{\text{Subject}}$$

Using the sales multiple from Company 1 (Exhibit 6.11) and applying them to the net income of the subject:

$$\text{Equity Value}_{\text{Subject}} = 16.9 \times 0.3 = 5.1 \text{ (rounded)}$$

Analysts use the factors discussed previously to decide which types of pricing multiple(s) to use.

ValTip

The final determination of which particular pricing multiple(s) to use must be based on an understanding of how the subject compares to the guideline companies in term of the important factors discussed earlier (i.e., growth, size, longevity, profitability, etc.).

While the creation of the tables, including the calculation of the pricing multiples, is a fairly objective process, the final assessment of value is less so. As stated earlier, the use of the type of guideline company analysis shown here does not absolve the analyst from using judgment; it simply provides more targeted information on which to develop an opinion.

The subject in the last example has some attributes that would place it at the high end of the group and some that place it at the low end:

High End
- Asset turnover (Sale/Assets ratio)
- Leverage[17]
- Quick and current ratios

[17] Lower leverage (in this case, the subject has no debt) implies lower financial risk, all else being equal.

Neutral
Profit margins

Low End
Size[18]
Historical growth (which in this case reflects expected growth[19])

Because of the size and growth issues, the subject appears to be on the low end of this group of companies, implying that its pricing multiples should be at the low end of this group as well. Based on industry research and the types of statistics discussed earlier, we conclude in this illustration that the most appropriate ratios to use are the MVIC/EBIT and MVIC/EBITDA, equally weighted. Furthermore, the 25th percentile pricing ratios appear to adequately capture the subject's position vis-à-vis this group of guideline companies. The final value is $3.1 million.

ValTip

The analysis using guideline company transactions is essentially the same as what is shown here except there is considerably less data available. Furthermore, the application of valuation multiples from each of the databases results in a different type of value, e.g., with or without inventory or working capital.

CONCLUDING THOUGHTS ON VALUE

The market approach should be considered in virtually all valuations. Whether the subject is a large, diversified company or a small operation, sources of data may be available to estimate its value. Even if the comparables are not truly like the subject, this approach still may provide a sanity check on the values obtained using other approaches.

USING THE PRICING MULTIPLES FOR GROWTH

As discussed earlier, one of the most important determinants of price is growth—expected growth, not historical growth. Given how important this factor is in determining value, it is sometimes desirable to make adjustments to guideline companies whose growth might differ from the subject's to use their pricing multiples on a more objective basis. In other words, the purpose of this process is to restate the guideline companies' pricing multiples so that they reflect the expected growth of

[18] While the subject is placed on the "low end" for size, the guideline companies are all quite small, so the fact that the subject is so small is probably less important here.
[19] This is simply an assertion for this example.

the subject and not those of the guideline companies. Obviously this adjustment only reflects growth. Other adjustments may still be necessary to reflect other differences. For example, if Company A has a P/E multiple of 20, an expected earnings growth of 7 percent/year, and the subject's expected growth is only expected to be 4 percent/year, how can we adjust this P/E multiple of 20 downward so that it reflects an annual growth rate of only 4 percent while retaining the other characteristics of Company A?

Mathematics Behind the Adjustment

The ability to make this adjustment is based on some basic valuation relationships:

$$\text{Value}_{\text{Subject}} = \frac{\text{P}}{\text{E}} \times \text{Earnings}_{\text{Subject}} = \frac{\text{Earnings}_{\text{Subject}}}{\text{Capitalization Rate (Earnings)}}$$

This equation implies that the price/earnings ratio is the reciprocal of the capitalization rate applicable to earnings (not cash flow), further implying that:

$$\frac{\text{P}}{\text{E}} = \frac{1}{\text{Capitalization Rate}} = \frac{1}{\text{Discount Rate (Earnings)} - \text{Perpetual Growth Rate}}$$

This equation shows how the price/earnings multiple is related to the discount rate and the perpetual growth rate of the company.

Growth Estimates

The growth that is reflected in pricing multiples is expected perpetual growth; that is, it is *long-term* growth, not just for the next year or the next five years. This fact presents a problem, because most of the growth rates available for individual public companies are for the next three to five years, not forever.[20] These shorter-term growth rates can be obtained from individual equity analysts or some of the consensus reporting services, such as First Call, I/B/E/S, and Zacks (see Chapter 2).

Note: Some analysts believe that pricing multiples reflect short-term investor expectations much more than long-term. This may depend more on the type of company and the industry.

Three things should be noted about estimates obtained from most consensus reporting services:

1. These growth figures represent annual growth in earnings per share for the next three to five years; these are not long-term growth estimates.
2. The analysts from whom these estimates are obtained may be sell-side analysts, meaning that they may be somewhat optimistic about the prospects for these companies, since they work for firms that want to sell the stock. Also, some of these estimates may be a "consensus" of only one analyst. Smaller companies tend to be followed by fewer analysts.

[20] Even though perpetual growth rates are required, the importance of these rates decreases as the time frame increases.

3. Not all publicly traded companies are covered by these services. In such cases and in cases where there is only one analyst following the stock, it might be better to use industry growth estimates, if they are provided. Of course, the implicit assumption here is that the company's growth is consistent with the industry's.

In using these growth estimates, one must assume that the average annual growth in net income over the three- to five-year period is the same as that for Earnings Per Share (EPS). Furthermore, to use these growth rates for revenues and other measures of earnings (i.e., EBITDA, EBIT, pretax income, and cash flow), one must assume they will all grow at the same rate. These are not necessarily unreasonable assumptions; however, there may be certain cases in which they are not appropriate.

Computing Blended Growth

The adjustment for growth requires that *perpetual* growth be adjusted. Perpetual growth is a growth rate that is not readily available; therefore, it must be computed and computed in such a way that is consistent with this growth adjustment approach. Assuming we use the analysts' consensus growth estimates described above for the next three to five years, we must then find growth rates for subsequent periods (years 4 or 6 and beyond). The objective is to blend these two growth rates together, to obtain a single average annual growth rate that can be used in this adjustment.

The blended growth rate, g_0, that is included in each of the guideline company's pricing ratios must satisfy the following:

$$\text{Value} = \frac{CF_1}{r-g_0} = \frac{CF_1}{(1+r)^1} + \frac{CF_1\times(1+g_1)}{(1+r)^2} + \ldots + \frac{\dfrac{CF_1\times(1+g_1)^4\times(1+g_2)}{r-g_2}}{(1+r)^5}$$

Where:

g_1 = The analysts' growth estimate (assumed to be applicable to a five-year period)
g_2 = The annual EPS growth rate after the first five years
r = The discount rate
CF_1 = Cash flow in year 1

Fortunately, computers can perform this analysis fairly easily. The table in Exhibit 6.13 shows the blended, perpetual growth rate for a range of short-term (assumed to be five-year) and long-term growth rates and a discount rate of 20 percent.

As a point of reference, real (before inflation) gross domestic product has grown by about 3 percent per year since the 1920s. Since the discount rate and cash flow assumptions are in nominal terms (i.e., they include inflation), the growth rate also must be nominal. Therefore, a long-term growth rate would include the long-term inflation rate forecast as well as any real growth in earnings. (If long-term inflation were expected to be 3 percent and if the real growth in earnings of a company were expected to be 3 percent, then this long-term rate would be 6 percent.)

Exhibit 6.13 Blended Perpetual Growth Rates

Discount Rate 20%

Short-Term Growth	Long-Term Growth Rate					
	3%	4%	5%	6%	7%	8%
3%	3.0%	3.6%	4.1%	4.8%	5.4%	6.1%
5%	3.9%	4.4%	5.0%	5.6%	6.2%	6.9%
10%	5.9%	6.4%	6.9%	7.5%	8.1%	8.7%
15%	7.6%	8.1%	8.6%	9.1%	9.6%	10.2%
20%	9.1%	9.6%	10.0%	10.5%	10.9%	11.4%
25%	10.5%	10.8%	11.2%	11.6%	12.1%	12.5%

Calculating the Adjusted Multiple

The formula for adjusting guideline companies' pricing multiples for growth is:

$$\text{Multiple}_{\text{Adjusted}} = \frac{1}{\frac{1}{\text{Multiple}_{\text{Original}}} + g_{\text{Original}} - g_{\text{Adjusted}}}$$

Where:

g = Blended expected perpetual growth rates

Multiple = Any of the ones based on income statement parameter.[21]

In making this adjustment to the pricing multiples of the guideline companies, the g_{Original} is the growth rate of the guideline company and g_{Adjusted} is the growth rate of the subject. By making this substitution, one is computing the pricing multiples of the guideline companies as if they all had the same expected growth as the subject.

For example, assume a guideline company has a P/E ratio of 20 and a blended perpetual growth rate of 10.5 percent, and the subject's expected perpetual blended growth rate is 7.5 percent. The adjusted multiple would be:

$$1 / ((1 / 20) + 10.5\% - 7.5\%) = 1 / (0.05 + 0.03) = 12.5$$

The resulting multiple is considerably lower than the original guideline company P/E of 20. This makes sense because the growth rate of the subject is quite a bit lower than the guideline. The 12.5 represents the P/E of a company that is identical in all respects to the guideline company except its growth is that of the subject. As such, other adjustments may be appropriate as well, including risk adjustments.

Reconciliation with Income Approach

If the subject's growth is much higher than that of the guideline companies and no adjustment has been made to the pricing multiples for this difference, the income

[21] It is not clear that expected growth is included in pricing multiples such as price/book or price/assets. Consequently, these types of ratios should not be adjusted for growth.

approach will likely result in a much higher value than the market approach. The opposite is true if the subject's expected growth is lower than those of the guideline companies. As discussed earlier, expected growth is one of the hidden assumptions in the market approach. This growth adjustment formula can help reconcile differences between this approach and other valuation approaches.

ValTip

Sometimes differences in growth assumptions can explain large differences between values derived from the income approach and those from the market approach.

ADJUSTING THE GUIDELINE MULTIPLES FOR SIZE

Earlier it was noted that smaller companies often have more business and financial risk than large companies. As a result, smaller companies tend to have lower pricing multiples. Therefore the analyst may attempt to restrict the selection of guideline companies to those which are approximately the same size as the subject company.

Unfortunately, despite these attempts, suitable guideline companies often are a significantly different size from the company being valued. This section shows one method on how guideline company multiples can be adjusted for size differences. The adjusted guideline company multiples reflect the information in the original multiples as if they had been derived from firms of the same size as the subject company. It is important to note that this method is not currently widely used, but is presented to illustrate the concept.

The popular *Stocks, Bonds, Bills, and Inflation 2000 Yearbook, Valuation Edition (SBBI)* published by Ibbotson Associates documents the differences in *returns* that have been observed for companies of different size (Chapter 5). The largest New York Stock Exchange firms (in the first decile of companies) have an arithmetic mean return of 12.13 percent, whereas the smallest firms (in the tenth decile) have an arithmetic mean return of 20.73 percent. The difference is 8.60 percent.

Suppose a larger guideline company is in the eighth decile and the smaller subject company is in the tenth decile. The *SBBI* reference shows that the arithmetic mean return for the companies in the eighth decile is, on average, 3.93 percent lower than the arithmetic mean return for the smaller companies in the tenth decile. Given these conditions, most analysts would agree that the equity *discount* rate for the subject firm could be 3.93 percent larger than the equity discount rate for the guideline company. Using this concept, corollary modifications to multiples will be described.

Two types of *base* guideline company multiples include equity multiples and invested capital multiples. These multiples are related to the commonly used valuation models where:

- The value of equity is found by dividing the expected net cash flow to equity by the equity capitalization rate.
- The value of invested capital is found by dividing the expected net cash flow to invested capital by the invested capital capitalization rate.

After showing how these base guideline company ratios should be adjusted for the effects of size, variant forms of these base multiples are adjusted.

The alterations described in the remainder of this section can be made using the following simple formula:

$$\text{Adjusted Multiple} = \frac{1}{\left(\frac{1}{\text{Multiple}}\right) + \left(\alpha\epsilon\theta\right)}$$

Where:

α and ϵ = Multiples formed from guideline company information

θ = The required increase in the equity discount rate

(It is assumed that the guideline company is larger than the subject company.)

Guideline Company Data

Suppose a larger guideline company, from the eighth decile of the NYSE, had the following multiples, before considering any adjustments:

Price/ Earnings	11.111
MVIC/After-Tax EBIT	11.111
Price/ Revenue	1.389
MVIC/Revenue	3.472

Also assume the following information had been assembled for the guideline company data:

Equity Discount Rate	14.00%
Growth Rate	5.00%
Equity Capitalization Rate	9.00%
Revenue/ Earnings	8 x
Revenue/ After-Tax EBIT	3.2 x
Equity/ MVIC	40.00%

Adjusting Base Multiples

If the smaller subject company is about the size of the firms in the tenth decile of the NYSE, both its equity discount rate and its equity capitalization rate should be θ = 3.93 percent larger than the comparable rates for the guideline company.

Using an equity capitalization rate of 12.93 percent (= 9.00 percent + 3.93 percent) results in an adjusted price/earnings multiple of 7.734 (= 1 / 12.93 percent). This same result can be obtained by using the general form mentioned above:

Equation 1: $$\text{Adjusted Multiple} = \frac{1}{\left(\frac{1}{\text{Multiple}}\right) + \theta}$$

$$7.734 = \frac{1}{\left(\frac{1}{11.111}\right) + 3.93\%}$$

The lower multiple of 7.734 represents what the guideline company's P/E multiple would be if it were the same size as the subject company.

The adjustment of an invested capital multiple requires the use of one additional piece of guideline company information: ϵ = Equity/ MVIC (the ratio of the market value of equity to the market value of total invested capital). Recall that the value of invested capital is found by dividing the expected net cash flow to invested capital by the invested capital capitalization rate. The invested capital capitalization rate in turn, is derived from the weighted average cost of capital (WACC). *The WACC is affected by modifications of the equity discount rate only to the extent that equity contributes to the total invested capital of the firm. Therefore, changes in the equity discount rate need to be taken into account only partially.* This is the reason for the addition of the ϵ factor.

In this example, the equity of the guideline company represents 40 percent of its invested capital. Accordingly, the MVIC/*After-Tax* EBIT ratio for the guideline company should be adjusted from 11.111 to 9.459.

$$\textit{Equation 2:}\ \text{Adjusted Multiple} = \frac{1}{\left(\frac{1}{\text{Multiple}}\right) + \epsilon\theta}$$

$$9.459 = \frac{1}{\left(\frac{1}{11.111}\right) + [40\% \times 3.93\%]}$$

The lower multiple of 9.459 represents what the guideline company's base invested capital multiple would be, adjusted downward for the effects of size.

Adjusting Variations of the Base Multiples

Variations of the base multiples are sometimes used. They are formed from alternative measures of the benefits. For example, the analyst might be interested in using a multiple based on revenues as opposed to earnings.

To convert from the base measure of benefits to a variant measure, a scale factor is used. Here α will represent the multiple required in the conversion. For example, if the guideline company has after-tax earnings of $1 million and revenues of $8 million the value of α would be 8.

When the benefits are increased by a factor of α, the resultant variation of the base multiple should be reduced by a factor of $1/\alpha$. The first two terms in Equation 3 reflect this fact. Here we identify the base multiple simply as "Multiple" but a variant of the base multiple as "Variant."

$$\textit{Equation 3:}\ \text{Variant} = \frac{\text{Multiple}}{\alpha} = \frac{1}{\alpha\ \text{Cap Rate}}$$

The last term in Equation 3 shows that the variant multiple can be found by increasing the capitalization rate by a factor of α.

In the next example, the guideline company's unadjusted price/revenue is 1.398. The *adjusted* price/revenue multiple can be found from the unadjusted guideline multiple as shown in Equation 4.

$$\textit{Equation 4:}\ \text{Adjusted Multiple} = \frac{1}{\left(\frac{1}{\text{Multiple}}\right) + \alpha\epsilon\theta}$$

$$0.967 = \frac{1}{\left(\frac{1}{1.389}\right) + (8 \times 100\% \times 3.93\%)}$$

This equation implies that, after adjusting for size, the variant guideline multiple (in this case, its price/revenue multiple) should be reduced from 1.389 to 0.967.

Notice that ϵ was assigned a value of 100 percent. When working with equity multiples such as price/earnings or variants thereof such as price/revenue, the underlying capitalization rate is derived 100 percent from the equity discount rate.

However, as previously mentioned, when working with invested capital ratios such as MVIC/Earnings or variants thereof, such as MVIC/Revenues, the underlying capitalization rate is derived from the WACC. *Again, since the WACC is only partially affected by modifications of the equity discount rate, the fraction ϵ is required.*

In addition, the value of α is also a bit different. *Instead of being 8 (= Revenues/Net Income), it must be 3.2 (= Revenues/After-Tax EBIT). Here after-tax EBIT is used as a surrogate for the expected net cash flow to invested capital.*[22]

In the example, the guideline company's unadjusted MVIC/Revenue is 3.472. Equation 4 also can be used to find the *adjusted* MVIC/Revenue.

$$2.956 = \frac{1}{\left(\frac{1}{3.472}\right) + (3.2 \times 40\% \times 3.93\%)}$$

This equation implies that, after adjusting for size, the variant guideline multiple (in this case, its MVIC/Revenue ratio) should be reduced from 3.472 to 2.956.

In some cases it may be necessary to use adjusted numbers to properly compute the α scaling factor. For example, if Revenue/(After-tax EBIT) is high or low for the most recent year, it might be better to use such a ratio for a more typical year for making the size adjustment.

SUMMARY

As stated earlier, the value of an original multiple adjusted for the size effect can be obtained by using the following equation:

[22] In general, after-tax EBIT is used to represent the cash flows to both the debt and equity holders. The only major differences between this and net income are interest expense and taxes.

$$\text{Adjusted Multiple} = \frac{1}{\left(\frac{1}{\text{Multiple}}\right) + \alpha\epsilon\theta}$$

Where:

α = The scale factor, which converts the base measure of the benefits to an alternative measure of the benefits for the guideline company. (If an alternative measure—that is, something other than price/net income, is not being used, then $\alpha = 1$.)

ϵ = The ratio of the equity value to the total invested capital of the guideline company; should only be used when working with invested capital multiples. (When working with equity multiples $\epsilon = 1$.)

θ = The difference in the equity discount rates due to size effects.

With the exception of θ, all other factors are computed using the balance sheet and income statement items for the guideline company, not the subject company. The only point at which consideration of the subject occurs here is in determining θ.

Using this approach, the following multiple modifications were made:

Multiple	Unadjusted	Adjusted
Price/ Earnings	11.111	7.734
MVIC/After-Tax EBIT	11.111	9.459
Price/Revenue	1.389	0.967
MVIC/Revenue	3.472	2.956

Other Information

For additional information on the market approach see *The Market Approach to Valuing Business* by Shannon P. Pratt (New York: John Wiley & Sons, Inc., 2001).

CHAPTER 7

Asset Approach

The asset approach is defined in the *International Glossary of Business Valuation Terms* as "a general way of determining a value indication of a business, business ownership interest, or security using one or more methods based on the value of the assets net of liabilities."[1]

In the valuation of a business or business enterprise, the asset approach presents the value of all the tangible and intangible assets and liabilities of the company. As typically used, this approach starts with a book basis balance sheet as close as possible to the valuation date and restates the assets and liabilities, including those that are unrecorded, to fair value (financial reporting) or fair market value (tax and other purposes). In this chapter, either standard will be referred to by the term "fair market value" (see Chapter 1 for definitions).

On the surface, the asset approach seems to be simple, but deceptively so. The application of this approach introduces a number of complicating factors that must be addressed before a satisfactory analysis is concluded.

FUNDAMENTAL THEORY

Accounting is generally historical cost-based. At any point in time, a company's balance sheet represents a number of accounts stated on the basis of cost. Presenting financial statements on a cost basis brings about a conceptual conflict:

> Traditionally, cost (or more precisely historical cost) is assumed to be the proper basis of accounting for assets acquired, services received and for the interests of creditors and owners of a business entity. Completed transactions are the events to be recognized and made part of the accounting records under the cost principle. At the time of the transaction, the exchange price usually represents the fair market value of the goods or services exchanged, as evidenced by the agreement of an informed buyer or seller. With the passage of time, however, the economic value of an asset such as land or a building may change greatly, particularly in times of inflation, however, the cost principle requires that

[1] *International Glossary of Business Valuation Terms,* as subscribed to by the American Institute of Certified Public Accountants, American Society of Appraisers, Canadian Institute of Chartered Business Valuators, National Association of Certified Valuation Analysts and The Institute of Business Appraisers.

> historical cost, rather than a later "fair market value" continue to serve as the basis for values in the accounts and in the financial statements.[2]

Thus, a historically based accounting balance sheet will almost always bear little relationship to value. The balance sheet is useful only as a starting point and requires a series of adjustments to reach fair market value. And, as is discussed later in the chapter, depending on the interest being valued, the value indication thus derived may require further adjustments to properly reflect fair market value relative to the specific subject *interest*.

Book value, which pertains to cost basis accounting financial statements, is *not* fair market value.

The value of certain assets (on a GAAP basis), such as cash, accounts receivable, and to a lesser extent inventory, may closely approximate book value. Likewise, the value of other reported assets may not approximate book value. The value of other assets, such as property, plant, and equipment, seldom equals book value. Furthermore, unless purchased as part of a transaction, intangible assets are usually not recorded on the books.

The asset approach is more commonly used in valuations for financial and tax reporting and for asset intensive businesses. An example of a business valuation employing the asset approach is presented later in this chapter.

APPLICABILITY

Revenue Ruling 59-60 discusses the use of the asset approach:

> Earnings may be the most important criterion of value in some cases whereas asset value will receive primary consideration in others. In general, the appraiser will accord primary consideration to earnings when valuing stocks of companies which sell products or services to the public; conversely, in the investment or holding type of company, the appraiser may accord the greatest weight to the assets underlying the security to be valued.[3]

The Revenue Ruling also states that:

> The value of the stock of a closely held investment or real estate holding company, whether or not family owned, is closely related to the value of

[2] Meigs, Mosich, Johnson, and Keller, *Intermediate Accounting*, 3rd ed. (New York: McGraw-Hill, Inc., 1974), pp. 16–17.
[3] Rev. Rul. 59-60, 1959-1 CB 237.

> the assets underlying the stock. For companies of this type the appraiser should determine the fair market values of the assets of the company. Operating expenses of such a company and the cost of liquidating it, if any, merit consideration when appraising the relative values of the stock and the underlying assets. The market values of the underlying assets give due weight to potential earnings and dividends of the particular items of property underlying the stock, capitalized at rates deemed proper by the investing public at the date of appraisal. A current appraisal by the investing public should be superior to the retrospective opinion of an individual. For these reasons, adjusted net worth should be afforded greater weight in valuing the stock of a closely held investment or real estate holding company, whether or not family owned, than any of the other customary yardsticks of appraisal, such as earnings and dividend-paying capacity.[4]

The Revenue Ruling states that operating companies (i.e., those that sell products or services to the public) typically should be valued based on earnings (as explained in Chapters 4 and 6, a number of methods are available), as that is how the investing community generally values such companies. And, at least in theory, operating companies that earn a rate of return in excess of a fair return on current and tangible assets will demonstrate market values in excess of book value—the implication being that the company also has an element of intangible value that likely is not recorded or, if recorded, is undervalued in the accounts. Thus, if the asset approach is used to value an operating company as a going concern, the result may be undervaluation, because the value of goodwill and other intangible assets likely is not reflected on the company's balance sheet; if such values are recorded, it is likely the result of a prior acquisition and is probably not reflective of current value. Therefore, the asset approach is typically used to value investment or holding companies and is a favored method for valuing family limited partnerships, small practices, and other pass-through entities.[5]

The asset approach also is sometimes used in the valuation of very small businesses and/or professional practices where there is little or no practice goodwill.

[4] *Ibid.*

[5] However, the Tax Court has ruled that a weighting of the income approach may be appropriate in the valuation of a holding-type company in certain circumstances. See, for example, *Estate of Andrews v. Commissioner,* 79 T.C., and *Estate of Helen J. Smith v. Commissioner,* T.C. Memo, 1999-368.

ValTip

Although the asset approach can be used in almost any valuation, it is seldom used in the valuation of operating companies. The time and costs involved in valuing individual tangible and intangible assets typically is not justified, because there is little, if any, increase in the accuracy of the valuation. The value of all tangible and intangible assets is captured, in aggregate, in the proper application of the income and market approaches. In many valuations there is no real need to break out the amount of value associated with individual assets, including goodwill. However, it is sometimes used as a floor value.

PREMISE OF VALUE

It is important to determine the premise of value before constructing any fair market value balance sheets. For an overall business valuation, the two premises of value are going concern and liquidation, both orderly and forced (Chapter 1). However, in applying premises of value to individual assets, other premises may apply, including fair market value—removal, fair market value in continued use, fair market value—installed, orderly liquidation value, and forced liquidation value. Fair market value in continued use and fair market value—installed usually are used to value assets as part of a going concern, giving consideration to installation and indirect costs. These premises are often used in valuations for mergers and acquisitions and financial and tax reporting. Orderly liquidation value and forced liquidation value reflect value in exchange, with forced liquidation value generally considered to be an auction value. Fair market value—removal reflects the value of the property including consideration of the cost of removal of the property to another location. See Addendum 2 for further information on premise of value for individual assets.

CONTROL VERSUS MINORITY

As discussed in some detail in Chapter 8, the degree of control possessed by the subject interest is a critical variable. This is an important consideration in the asset approach, because the value indication derived will usually be at *control* and is known as a *control* indicator. Furthermore, the asset approach typically provides a value indication stated on a *marketable* basis.

ValTip

If the asset approach is used in valuing a minority interest of a closely held company, the value indication derived usually will have to be adjusted from *control* to *minority* and, depending on the facts and circumstances, from a *marketable* to a *nonmarketable* basis.

To illustrate why minority and lack of marketability adjustments might be required, one must look at the underlying premise of this approach. The asset approach is a liquidation or quasi-liquidation scenario. Irrespective of the approaches and methods employed to value the individual assets, the asset approach assumes the assets can be liquidated and that the values reasonably represent values that could be obtained in the market. The liquidation of liabilities is likewise assumed; thus, the net asset value derived is based on the assumption that all assets and liabilities are liquidated at the indicated net asset value. This implies the interest has the power to liquidate the company, a classic control power. Furthermore, application of this approach is founded on the assumption that there is a ready and willing buyer for the interest at the appraised value. In reality, the willing buyer under the commonly referenced standards of value likely would not pay a price equal to a pro rata share of the total net asset value for a *minority* interest in an enterprise valued under the asset approach. The buyer likely would extract, and the willing seller likely would accept, discounts to reflect the lack of control (the asset approach assumes the power to liquidate) and lack of marketability (the asset approach assumes ready sale of the business).

BUILT-IN GAINS

The treatment of built-in gains has been controversial, with taxpayers and the Internal Revenue Service (IRS) historically possessing diametrically opposed points of view. As discussed more fully in Chapters 8 and 11, built-in gains arise when the fair market value of assets owned by an entity exceeds tax basis.

The IRS has repeatedly rejected the application of built-in gains, advancing its argument in 1991 with Technical Advice Memorandum (TAM) 9150001. The TAM concluded, "In determining the value of the decedent's stock in a Subchapter C corporation based on net asset value, no discount should be allowed for potential capital gains taxes that would be incurred if the corporation was liquidated since there is no indication that a liquidation is contemplated."[6]

Taxpayers have argued that, under the fair market value standard, a willing buyer could extract a discount for the tax on a built-in gain. In recent years, decisions by the Tax Court and by the U.S. Court of Appeals have taken the opposite view of earlier decisions that no reduction is warranted in the value of closely held stock to reflect capital gains tax (see Chapters 8 and 13).

GENERAL STEPS IN THE ASSET APPROACH

Balance Sheet as Starting Point

The first step in using the cost approach is to obtain a balance sheet as close as possible to the valuation date. Again, book value is not fair market value but is the starting point to create a fair market value balance sheet. A company balance sheet (GAAP) includes such items as cash, accounts receivable, marketable securities, inventory, prepaid expenses, land, buildings, furniture, fixtures, and equipment on the asset side, and accounts payable, accrued expenses, and interest-bearing debt plus equity accounts on the liabilities and equity side.

[6] Internal Revenue Service, *Technical Advice Memorandum* 9150001, 1991.

Restate Recorded Assets and Liabilities

Each recorded asset must be examined and adjusted to fair market value. In a proper application of this approach, individual intangible assets should be identified and valued as well. See Chapter 20 for techniques to value intangible assets. Once the asset side of the balance sheet has been restated to fair market value, it is a simple process to subtract all liabilities, again at fair market value, to derive the fair market value of the equity of the business under the asset approach. As a practical matter, analysts typically use book value amounts for liabilities. However, to the extent current financing terms differ from actual rates, an adjustment may be appropriate.

Unrecorded Assets and Liabilities

Most off-balance sheet assets are intangible in nature. However, there can be other types of assets, including a pending litigation claim to be paid and assets that have been written off but are still used in the business. Off-balance sheet liabilities include contingent liabilities such as potential environmental problems, pending tax disputes, and unfunded pensions.

ValTip

When notes to the financial statements are included, they often contain useful information concerning contingent liabilities.

Current and Tangible Assets

Cash and accounts receivable and other types of marketable securities are generally not difficult to value. Cash is cash, and accounts receivable should be adjusted for uncollectible amounts. The book value of other items, such as prepaid expenses, often is used as proxy for fair market value. The one asset that may entail some adjustment would be inventory. Internal Revenue Service Revenue Procedure (Rev. Proc.) 77-12 (Addendum 3) provides some guidance for valuing inventory. See Addendum 1 to this chapter for factors to consider in the valuation of real estate, and Addendum 2 for factors to consider in the valuation of machinery and equipment.

VALUATION OF INDIVIDUAL ASSETS AND LIABILITIES EXAMPLE

B. Brothers Holding Company, Inc. (the company), a C corporation, is being valued on a minority interest basis for estate tax purposes as of December 31, 20XX. The company has a significant cash position (which includes a large money market account); owns a portfolio of marketable securities; has receivables, inventory, prepaid expenses, land and buildings, and a significant amount of machinery and equipment. Organization costs also appear on the balance sheet. Liabilities include short-term

Exhibit 7.1 B. Brothers Holding Company, Inc., Asset Based Approach, As of December 31, 20XX

Assets	REPORTED December 31, 20XX	DEBITS		CREDITS	ADJUSTED December 31, 20XX
Cash & Equivalents	$ 5,200,000				$ 5,200,000
Investments in Marketable Securities	4,200,000	3,368,000	(1)		7,568,000
Accounts Receivable-Trade	8,400,000		(2)	95,000	8,305,000
Accounts Receivable-Officer	75,000		(3)	75,000	0
Inventories	5,900,000	600,000	(4)		6,500,000
Prepaid Expenses	2,800,000		(5)	100,000	2,700,000
Total Current Assets	$26,575,000				$30,273,000
Land and Buildings	$ 7,200,000	12,000,000	(6)		$19,200,000
Accumulated Depreciation	(4,800,000)	4,800,000	(6)		0
Machinery and Equipment	23,200,000	1,200,000	(7)		24,400,000
Accumulated Depreciation	(12,700,000)	12,700,000	(7)		0
Net Fixed Assets	$12,900,000				$43,600,000
Intangible Assets (Organization Costs)	295,000		(8)	295,000	0
TOTAL ASSETS	$39,770,000				$73,873,000
Liabilities					
Notes Payable	$ 500,000				$ 500,000
Accounts Payable	6,550,000				6,550,000
Current Portion of Long-Term Debt	1,250,000		(9)	11,800	1,261,800
Accrued Expenses	2,400,000				2,400,000

Total Current Liabilities	$10,700,000				$10,711,800
Long-Term Debt	$ 5,000,000		(9)	152,300	$ 5,152,300
Deferred Income Taxes	800,000				800,000
Other Long-Term Liabilities	250,000		(10)	300,000	550,000
Built-In Gain Liability (Schedule C)	0		(11)	18,876,360	18,876,360
Total Liabilities	$16,750,000				$36,090,460
Shareholders' Equity					
Common Stock	$ 100,000				$ 100,000
Paid-In Capital	2,000,000				2,000,000
Retained Earnings	20,920,000	19,905,460	(12)	34,668,000	35,682,540
Treasury Stock	0				0
Total Shareholders' Equity	$23,020,000				$37,782,540
TOTAL LIABILITIES & EQUITY	$39,770,000				$73,873,000

Adjustments to Balance Sheet

(1) To adjust marketable securities to current market value. See Exhibit 7.2.
(2) To write off two uncollectible accounts and adjust allowance.
(3) To write off advance to officer, which will not be repaid.
(4) To adjust inventory to fair value.
(5) To write off (a) the portion of prepaid insurance which has expired, and (b) a forfeited deposit.
(6) To adjust real estate to fair value, per appraisal by Dick Hartz, MAI.
(7) To adjust personal property to fair value, per appraisal by Joe Emandi, ASA.
(8) To write off capitalized organization costs, which provide no future economic benefit.
(9) To adjust fair value of debt. See Exhibit 7.3.
(10) To record estimated liability for pending litigation.
(11) To record liability for built-in gain. See Exhibit 7.4.
(12) Net adjustments to equity

notes payable, accounts payable, accrued expenses, and long-term debt (that which is due in one year is classified as a current liability). Although in reality an income approach and market approach may be applicable in valuing the company, for purposes of this example only the asset approach (without intangible assets) is shown.

To begin the application of the asset approach, we obtained the company's balance sheet as of December 31, 20XX, which is presented in Exhibit 7.1. A brief discussion of the Company's accounts follows.

Cash

Cash is typically not adjusted in the asset approach. If the company is audited, the analyst may rely on the auditors for adjustments to the accounts (this holds true for many accounts, not just cash). If the company is not audited, the analyst may want to obtain copies of the bank statements as documentation.

Marketable Securities

The company has a portfolio of marketable securities with a book value of $4.2 million. The portfolio consists of investments in 20 equities, which must be marked to market as of the valuation date. Calculations are presented in Exhibit 7.2. Each investment is recorded at its current fair market value, the result being that the fair market value of the portfolio as of the valuation date is $7,568,000. An adjustment of $3,368,000 is made to bring the account to fair market value (Adjustment No. 1).

Exhibit 7.2 B. Brothers Holding Company, Inc., Marketable Securities (As of December 31, 20XX)

Stock	No. Shares	Avg. Cost /Sh.	Basis	Current Price	Fair Value
A	15,000	$24.0000	$ 360,000	$72.5000	$1,087,500
B	20,000	35.0000	700,000	28.0000	560,000
C	25,000	40.0000	1,000,000	43.0000	1,075,000
D	30,000	12.5000	375,000	42.0000	1,260,000
E	12,000	28.5000	342,000	21.5000	258,000
F	25,000	11.5000	287,500	15.0000	375,000
G	5,000	4.0000	20,000	29.5000	147,500
H	9,000	0.7500	6,750	65.0000	585,000
I	10,000	8.0000	80,000	14.0000	140,000
J	8,000	9.5000	76,000	12.5000	100,000
K	6,000	24.0000	144,000	15.5000	93,000
L	12,000	5.0000	60,000	14.5000	174,000
M	1,000	2.2500	2,250	7.0000	7,000
N	5,000	7.5000	37,500	38.0000	190,000
O	16,000	12.0000	192,000	17.5000	280,000
P	5,000	10.0000	50,000	16.0000	80,000
Q	20,000	12.0000	240,000	46.0000	920,000
R	10,000	6.5000	65,000	2.0000	20,000
S	4,000	18.0000	72,000	33.0000	132,000
T	4,000	22.5000	90,000	21.0000	84,000
Total			$4,200,000		$7,568,000

Accounts Receivable

Trade receivables should be examined for collectability. The allowance for doubtful accounts should be reasonable and be reviewed for adequacy. In this example, we learned that a review for doubtful accounts had not been performed for eight months, and that there were two accounts totaling $32,000 that were uncollectible. Additionally, after that write-off, the reserve for doubtful accounts required an additional provision of $63,000. Thus, the total adjustment is $95,000 (Adjustment No. 2).

Accounts Receivable—Officer

Early in the year, the company loaned its chief executive officer and majority shareholder $75,000. Although carried on the books as a loan, the officer has no intention to repay the debt and the company has no plans to collect. This receivable is written off in its entirety (Adjustment No. 3). This transaction may have tax consequences, as it may be properly classified as compensation expense to the company and income to the officer.

Inventory

Inventories consist of goods held for sale, partially completed goods that have entered the production process, and raw materials to be used in production. The accounting convention for inventory is that it be recorded at the lower of cost or market. This means that inventory price increases during the period inventory is held for sale are ignored, but price declines are recognized.

The three most common inventory valuation methods are the cost of reproduction method, the comparative sales method, and the income method. The methods are summarized in Rev. Proc. 77-12, which is reproduced in Addendum 3 at the end of this chapter.

In reality, depending on materiality, an appraiser might accept inventory at book value based on client representations that the book value reasonably approximates fair market value. If this were the case, the appraisal report may disclose the fact that valuation procedures such as described in Rev. Proc. 77-12 were not performed.

In our example, we are assuming the fair market value of the company's inventory is $6.5 million. Thus, an upward adjustment of $600,000 (Adjustment No. 4) is required.

Prepaid Expenses

Prepaid expenses, such as deposits and insurance, must be examined to determine whether their amounts on the books represent future economic benefit. For example, a company may have recorded an amount for a deposit that has since been forfeited. Such an amount would have to be written off to reflect its net realizable value of zero.

We are assuming that the company had paid deposits (classified in prepaid expenses) totaling $40,000 in connection with the proposed move of its sales department to another facility. The move was cancelled in July and the deposits forfeited. An adjustment is required to write off these deposits. It was also determined that $60,000 of prepaid insurance had expired. The total adjustment (Adjustment No. 5) is $100,000.

Fixed Assets

Real Estate and Real Property

Recorded tangible assets representing land, buildings, improvements, and the like technically are termed real estate. Real estate is defined as ". . . the physical land and appurtenances including structures affixed to the land . . ."[7] The term "real property" is an *intangible* concept and "includes all interests, benefits, and rights inherent in the ownership of physical real estate."[8] The real property rights inherent in an entity's real estate ownership interest are taken into account and affect the appraised value of real estate.

As discussed in Addendum 1, all three approaches to value are used in the valuation of real estate. The *cost approach* estimates the cost to reproduce or replace existing improvements. The *market approach* involves comparing recent sales of property similar to the subject. The *income approach* determines value by capitalizing cash flows a property is expected to produce over a defined holding period.

The appraisal of real estate is a complex and often expensive process and is usually best left to specialists. If an entity's real estate has recently been acquired or is a small percentage of its net asset value, using book values as proxies for fair market values may be acceptable.

In the example, the real estate is material to value, and we obtained real estate appraisals of all the land and buildings from the client's appraiser. The total fair market value is $19.2 million. Adjustments are recorded to the asset and accumulated depreciation accounts to reflect the appraised amounts (Adjustment No. 6).

Machinery and Equipment

As with the appraisal of real estate, the appraisal of machinery and equipment (M&E) is usually best left to M&E appraisers, who are specialists in this discipline. The three classic approaches to values are considered in valuing M&E (see Addendum 2), but the income approach is not used often. The M&E appraisal must reflect the premise of value for the enterprise valuation (i.e., if the business is valued as a going concern, then the premise of value for the M&E should be "continued use"). Unless it is immaterial, it is usually not advisable to use book values as proxies for fair market values. Contradictions between book depreciation and functional and economic obsolescence may lead to a misleading result.

In the example, we obtained appraisals from the client's appraiser of all of the machinery and equipment. The total fair market value is $24.4 million. Adjustments are recorded to the machinery and equipment and accumulated depreciation accounts to reflect the appraised amounts (Adjustment No. 7).

Recognized Intangible Assets

The financial statements of an enterprise often contain accounts such as organization costs or intangible assets related to acquisitions. Recorded intangible assets generally are one of two types:

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[7] American Institute of Real Estate Appraisers, *The Appraisal of Real Estate,* 11th ed. (1996), p. 7.
[8] *Ibid.*

1. Those that arise from capitalized historic expenditures for services
2. Those that represent historic payments for intangible assets, which may or may not have value at the valuation date

The former typically have no value and are written off, but the latter may need to be revalued.

The company's balance sheet reflects intangible assets (organization costs) of $295,000. These are historic costs that provide no future benefit and are written off (Adjustment No. 8).

LIABILITIES

On the other side of the balance sheet are the liabilities, which, like assets, must be stated at fair market value.

Accounts Payable

These accounts represent short-term obligations incurred in the ordinary course of business. Accounts payable represent amounts due to creditors (suppliers and service providers) who have provided goods and services to the company. The payables should be examined to determine whether any amounts do not represent bona fide obligations. This account is not often adjusted. In our example, no adjustment is required.

Accrued Liabilities

The term "accrued liabilities" is used to designate obligations that come into existence as a result of past contractual commitments or as a result of tax legislation, such as income, property, and sales tax laws.[9] The analyst should be diligent that such liabilities not be understated (by the failure to properly accrue such amounts) or overstated (by the failure to write off amounts that have been satisfied). No such adjustments are required in our example.

Interest-Bearing Debt

Interest-bearing debt may be short term or long term. Such liabilities represent financing arrangements. The distinction between a short-term or a long-term classification rests on whether the debts are to be extinguished within one year or one operating cycle. Examples of long-term liabilities are bonds, notes, mortgages, and capitalized lease obligations. The principal reason why fair market value may differ from book value rests with differences in interest rates. The appraiser may examine market interest rates as of the date of value and compare those rates with the coupon rate of the obligation.

[9] *Intermediate Accounting,* pp. 255–256.

In our example, the company had interest-bearing debt of $6.25 million at the valuation date. Of this amount, the current portion was $1.25 million and the long-term portion $5 million. The coupon rate of the obligation is 7 percent. At the valuation date, the market yield to maturity was 6 percent. If the coupon rate of a security exceeds its yield, the fair market value of the security is greater than its face value, and vice versa.

The valuation of the loan is presented in Exhibit 7.3. In that schedule we value the current portion and long-term portion separately. The general approach is to discount to present value, at the market rate of return, the actual or coupon-based cash flows, principal, and interest. It should be noted that in year 1, total interest is $437,500, of which $87,500 relates to the short-term portion (7 percent coupon rate × the short-term principal of $1.25 million) and $350,000 to the long-term portion (7 percent coupon rate × the long-term principal of $5 million). The cash flows are discounted at the market rate of 6 percent. The year-end convention is observed for cash flows and discount periods. The fair market value of the current portion is $1,261,800 and the fair market value of the long-term portion is $5,152,300 (Adjustment No. 9).

UNRECORDED ASSETS AND LIABILITIES

The appraiser performs some reasonable due diligence to determine whether any assets or liabilities may exist that are not recorded in the accounts. Unrecorded assets may take the form of intangible assets or claims. Unrecorded liabilities may take the form of contingencies such as pending or threatened litigation. Quantifying such assets and liabilities can be difficult.

In our example, management disclosed two potential contingent liabilities relating to "slip and fall" lawsuits. Upon further examination, these were judged to be immaterial and no adjustment was made.

Management also reported that they have been named as defendants in a breach-of-contract dispute. The plaintiff is claiming damages of $1 million. In discussing this pending litigation with management and counsel, we learned that settlement discussions have been under way with a likely outcome of $300,000 to $400,000. Counsel further opined that if the case went to trial, they believed there was a 25 percent chance of losing at the claimed amount, a probability-adjusted loss of $250,000. Based on the range of possible outcomes, we judged the fair market value of the pending litigation contingent liability to be $300,000 (Adjustment No. 10).

BUILT-IN GAIN

The application of taxes in the asset approach is controversial. For presentation purposes the calculation of the built-in gain liability is presented in Exhibit 7.4. The fair market value of the equity of the company after the above adjustments but before an adjustment for built-in gain is $56,658,900. The basis is $9,468,000. Thus, there is a built-in-gain of $47,190,900. Assuming an average estimated tax rate of 40 percent, the tax liability related to the gain is $18,876,360 (Adjustment No. 11). Based on the above adjustments (cumulatively shown in Adjustment No. 12), the fair market value of the company using the asset approach is $37,782,540.

Exhibit 7.3 B. Brothers Holding Company, Inc., Valuation of Debt (As of December 31, 20XX)

Current Portion		
Principal	$1,250,000	
Coupon Rate—Actual	7.0%	
Market Yield to Maturity	6.0%	
Year		1
Interest Payments—Actual (1)		$87,500
Principal Payments—Actual		1,250,000
Debt Service-Actual		$1,337,500
Present Value Factor @ 6.0%		0.9434
FairValue/Fair Market Value (rounded)		$1,261,800
Long-Term Portion		
Principal	$5,000,000	
Coupon Rate—Actual	7.0%	
Market Yield to Maturity	6.0%	

(continues)

Exhibit 7.3 *continued*

Year	1	2	3	4	5
Principal Outstanding (assume payments are made at year-end)	$5,000,000	$5,000,000	$3,750,000	$2,500,000	$1,250,000
Interest Payments—Actual (2)	$ 350,000	$ 350,000	$ 262,500	$ 175,000	$ 87,500
Principal Payments—Actual (3)	na	1,250,000	1,250,000	1,250,000	1,250,000
Debt Service—Actual	350,000	1,600,000	1,512,500	1,425,000	1,337,500
Present Value Factor @ 6.0%	0.9434	0.8900	0.8396	0.7921	0.7473
Sum of Present Values	$ 330,190	$1,424,000	$1,269,900	$1,128,740	$ 999,510
FairValue/Fair Market Value (rounded)	$5,152,300				

(1) Related to Short-Term Portion
(2) Related to Long-Term Portion
(3) Principal Payment in Year 1 relates to short-term portion

Exhibit 7.4 B. Brothers Holding Company, Inc., Calculation of Built-In Gain Liability (As of December 31, 20XX)

Total Assets	$73,873,000
Less: Liabilities	
Total Current Liabilities	(10,711,800)
Long-Term Debt	(5,152,300)
Deferred Income Taxes	(800,000)
Other Liabilities	(550,000)
Net Asset Value Before Built-In Gain	$56,658,900
Less: Basis	(9,468,000)
Built-In Gain	$47,190,900
Effective Tax Rate	40%
Tax Liability	$18,876,360

CONCLUSION

The company's book basis balance sheet, with the fair market value adjustments to the assets and liabilities accounts as described above, is presented in Exhibit 7.1. The net book value of the company's equity was $23,020,000. After making the above adjustments, we conclude that the fair market value of the company's equity under the asset approach is $37,782,540. As stated earlier, this conclusion is control-based, assuming some marketability. Discounts for lack of control and lack of marketability are usually appropriate under a minority interest closely held premise.

ADDENDUM 1—UNDERSTANDING REAL ESTATE APPRAISALS

Introduction

Business valuation analysts often rely upon the work of other professionals during the process of a valuation engagement, including real estate appraisers. Although analysts usually include a disclaiming caveat about their reliance on other professionals, it would be helpful, nonetheless, to possess a basic general understanding of real estate appraisal. This addendum summarizes these factors.

The valuation of real estate, and interests in real estate, is well documented, with many textbooks, journals, and publications available for reference. The valuation of real estate has similarities to, and differences from, business valuation. Also, in certain types of asset-intensive businesses, buyers and sellers may confuse real estate value with business value, e.g. nursing homes. Real estate appraisal is highly regulated by the states, and is much more regulated than business valuation.

Valuation Standards and Regulations

The Uniform Standards of Professional Appraisal Practice ("USPAP") was created by legislation spurred by the failures in the savings and loan industry in the 1980s. USPAP addresses the valuation and reporting of real property, tangible personal property including machinery and equipment, and business valuations and intangible assets. Title XI of the Financial Institution's Reform, Recovery, and Enforcement Act ("FIRREA") of 1989 set forth the requirements that real estate appraisers be certified or licensed by the states and adhere to standards of appraisal practice (USPAP) set by the Appraisal Foundation in order to perform real estate appraisals for federally related transactions. Some states have extended this requirement to appraisals of real estate performed for other purposes. The primary standards within USPAP that apply to the appraisal of real estate are Standard 1: Real Property Appraisal, Development and Standard 2: Real Property Appraisal, Reporting.

The state licensing and certification process is strictly adhered to in the United States, and real estate appraisers must meet specific educational requirements for their license renewals. Some states require a permanent license. There is an exception if the assignment is for FIRREA-related financing purposes, where the states must grant a temporary license. The licensing process is controlled by each individual state and not coordinated at a federal level. Most appraisers would prefer a national system to ease the burdensome and costly regulatory process of maintaining licenses in several states.

Types of Reports Under USPAP

Real estate appraisers refer to USPAP when describing the type of valuation they may perform (Limited or Complete appraisals), and type of valuation report they furnish to the client (Restricted Use, Summary or Self Contained). USPAP differentiates between a Limited and Complete Appraisal based upon whether the appraiser has invoked the departure rule. This rule states "An appraiser may enter into an agreement to perform an assignment in which the scope of work is less than, or different from, the work that would otherwise be required by the specific require-

ments . . ."[10] This rule goes on to permit exceptions from specific requirements, provided that (in summary):

- The appraiser determines the appraisal process is not so limited that the results of the assignment are no longer credible
- The appraiser advises the client of the limitations and discloses the limitations in the report
- The client agrees that the limited service would be appropriate given the intended use."[11]

When a appraiser invokes the Departure Rule, they are still required to perform all steps that are necessary to provide a credible result.

A Restricted Use Report is often a brief letter that will "state" most information rather than provide a lengthy discussion. It may not discuss the data, valuation process, or analyses used. A Summary Report is required to state certain things and to summarize others, including a description of the property, its location, the data used, and methods employed in the approaches to value. Generally a Summary report may be up to 60 pages long with supporting exhibits. A Self-Contained Appraisal Report is a comprehensive narrative report, which is required to "discuss" items that are "summarized" in a Summary Appraisal Report. It presents all the data, reasoning and analyses used in the determination of value. Generally, a Self-Contained report may be 60 to 100 pages plus exhibits. USPAP allows Restricted Use Appraisal Reports only when there is no intended user other than the client.

These same types of reports are appropriate for real estate and tangible personal property under USPAP. Under the business valuation standards in USPAP, there are only two report types: an Appraisal Report and a Restricted Use Appraisal Report.

How to Find a Real Estate Appaiser

Most real estate valuations in the United States must be performed by state licensed appraisers. If you need to locate qualified real estate appraisers, most professional organizations maintain lists of appraisers. The largest organization in the United States is the Appraisal Institute (*www.appraisalinstitute.org*), which has 19,000 appraisers in 112 chapters and maintains a searchable list of designated appraisers by geographic area and industry/property expertise, such as commercial real estate, airports, healthcare facilities, or timberland. Other organizations are the American Society of Appraisers (*www.appraisers.org*), American Society of Farm Managers & Rural Appraisers (*www.Agri-associations.org*), International Right of Way Association (*www.irwa.com*), National Association of Independent Fee Appraisers (*www.naifa.com*), and National Association of Master Appraisers (*www.masterappraisers.org*).

Outside the United States, the largest valuation organization is The Royal Institute of Chartered Surveyors (*www.rics.org*). It has over 110,000 members in

[10] The Appraisal Foundation, *USPAP, 2002 Edition,* p. 11.
[11] *Ibid.*

120 countries and has extensive membership in Europe, Africa, the Middle East and Asia. It also has search capabilities by geography and specialization worldwide.

Types of Interests

Ownership interests in real estate are referred to within the bundle of rights theory, where each of the interests can be separated and conveyed apart from the others.

Fee simple estate is typically defined as an absolute ownership, unencumbered by any other interest or estate, subject to the limitations imposed by the governmental powers of taxation, eminent domain, police power, and escheat.

Leased fee estate is typically defined as an ownership interest held by a landlord with the rights of use and occupancy conveyed by lease to others. The rights of the lessor (the leased fee owner) and the leased fee are specified by contract terms contained within the lease.

Leasehold estate is typically defined as the interest held by the lessee (the tenant or renter) through a lease conveying the rights of use and occupancy for a stated term under certain conditions.

Other ownership interests may include subleasehold interests, air rights, easements, and partial interests.

Standard and Premise of Value

The most commonly used standard of value is Market Value, which is defined as the most probable price that a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

- Buyer and seller are typically motivated
- Both parties are well informed or well advised, and acting in what they consider their own best interests
- A reasonable time is allowed for exposure in the open market
- Payment is made in terms of cash in U.S. dollars or in terms of comparable financial arrangements
- The price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.[12]

This standard of value recognizes value to a theoretical market, based upon the exposure time required for similar properties. If there are elements of duress, such as a short timeframe for a sale, that must be made known to the real estate appraiser, who otherwise will value the property based on standard exposure time periods for similar properties.

[12] Office of the Comptroller of the Currency under 12 CFR, Part 34, Subpart C-Appraisals, 34.42 Definitions (g).

In Use Value reflects the value of real estate to a particular enterprise. For example, a special purpose manufacturing facility may have a Market Value in Use to its organization that is much higher than its value in exchange to an alternate user. A Market Value in Use might be an appropriate standard in a valuation of real and personal property for purchase price allocation purposes.

Investment Value is the value of a property to a particular individual or investor and not necessarily the value in the marketplace.

Going-concern value is defined as "the value of a proven property operation. It includes the incremental value associated with the business concern, which is distinct from the value of the real property. The value of the going concern includes an intangible enhancement of the value of the operating business enterprise, which is produced by the assemblage of land, buildings, labor, equipment, and the marketing operation. This assemblage creates an economically viable business that is expected to continue. The value of the going concern refers to the total value of a property, including both the real property and the intangible personal property attributed to the business value."[13]

Going concern appraisals are typically conducted for operating facilities such as hospitals, surgery centers, nursing homes, continuous care retirement centers, hotels, restaurants, bowling alleys, manufacturing enterprises, and other facilities that are normally bought and sold as going concern operations. The market value definition requires that appraisals of these property types parallel the methodology and expectations of buyers and sellers of these operations. For these types of properties, the physical real estate assets are integral parts of an ongoing business, and the real property is very rarely sold independently of the business, except in sale/leaseback financing arrangements. It may be difficult to separate the market value of the land and building from the total value of the entire business, but such a division of realty and nonrealty components of value is possible and is often required by federal financing regulations.

Highest and Best Use

In *The Dictionary of Real Estate Appraisal*, Third edition, page 171, *highest and best use* is defined as "the reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value." The four criteria that must be met for the highest and best use are physical possibility, legal permissibility, financial feasibility, and maximum profitability.

The highest and best use of land that is vacant and available for development may differ from the highest and best use of that same property as improved. This is true when the improvements do not constitute an appropriate use. The existing use will continue unless or until the land value in its highest and best use exceeds the value of the entire property in its existing use (plus the cost to remove the improvements). Therefore, the analysis of highest and best use includes consideration of the property under two assumptions: land as if vacant for development and property as presently improved. These two analyses are then correlated into a final estimate of highest and best use.

[13] *The Appraisal of Real Estate,* 11th ed. (Chicago: Appraisal Institute, 1996), p. 27.

Three Approaches to Value

In contrast to business valuation or personal property valuation, all three approaches to value are commonly "applied" in real estate appraisals. In every real estate appraisal, market data is used in determining value. Market data can include sales and offerings of similar properties and tracts of vacant land, current prices for construction materials and labor, rentals of similar properties and their operating expenses, and current rates of return on investments and properties. From this data, values may be developed for the land and the property as a whole.

Cost Approach

Estimating value through the cost approach requires an estimate of the cost to reproduce or replace existing improvements. The value of improvements is estimated based upon the principle of substitution which holds that an informed purchaser will pay no more than the total cost to construct a similar building or improvements, less any accumulated depreciation. The method used to derive an indication of value by the cost approach is:

- Estimate the value of the site (land) as though vacant and available to be developed to its highest and best use
- Estimate the reproduction or replacement cost of the structure as of the effective date of appraisal
- Estimate the amount of accrued depreciation in the structure and categorize it into three major types: physical depreciation, functional obsolescence, and external obsolescence
- Deduct appropriate estimated depreciation from the reproduction or replacement cost of the structure to derive an estimate of the structure's contribution to total value
- Add estimated total present value of all improvements to the land value to obtain an indication of value for the subject property

There is additional discussion of the types of property depreciation and obsolescence in Addendum 2 to this chapter on the valuation of machinery and equipment.

The cost approach recognizes that market participants sometimes relate value to cost. Reliance on the principle of substitution, where a purchaser would not pay more for a property than it would cost to construct a new one, allows value parameters to be established under traditional appraisal theory.

Sales Comparison (Market) Approach

The Sales Comparison Approach is an estimate of value based upon a process of comparing recent sales of similar properties in the surrounding or competing areas to the subject property. Inherent in this approach is the principle of substitution, whereby a buyer would not pay more for a property than he or she could purchase a similar property for in the marketplace.

Under this approach the subject property is compared with similar properties of the same general type which have been sold recently or currently are available for sale in competing areas. It should be noted that real estate appraisers frequently

include data on asking prices rather than just completed transactions, whereas business appraisers sometimes limit their data to completed transactions. The asking prices used by real estate appraisers may be seen as indicators of the future direction of the market. This comparative process involves judgment as to the similarity of the subject property and the comparable sales or listings with respect to many value factors such as location, size, contract rent levels, quality of construction, reputation and prestige, age and condition.

Each comparable property is analyzed and adjusted to arrive at a unit rate of value for the subject, such as "per square foot" or "per acre." Vacant land or improved property can be valued in this manner, using adjustment grids. An example of an Adjustment Grid is shown in Exhibit 7.5, illustrating the adjustments made to comparable transactions for time, location, financing, and size.

Income Capitalization (Income) Approach

The theory of the income capitalization approach is based on the premise that value is equal to the present value of the cash flow and reversionary value the property will produce over a reasonable holding (ownership) period.

The direct capitalization method converts one year of income into a value using overall capitalization rates from similar sales. The overall rates take into consideration buyers assumptions of the market over the long-term.

The discounted cash flow method converts cash flows (including interim cash flows and reversion or terminal value) into a present value using an internal rate of return (or discount rate). The internal rate of return (IRR) is derived from a comparison of alternate investments, a comparative analysis of IRRs used by recent buyers of similar properties, and a review of published industry surveys.

The results of the income capitalization method are usually the primary value indicator for commercial, income producing real estate such as office buildings, retail shopping centers, multi-family apartment buildings, hotels, and multi-tenant distribution centers. Investors expect a reasonable rate of return on their investment based on the ownership risks involved; this approach closely parallels the investment decision process.

The value derived by real estate appraisers is the value of the property itself. In contrast to business valuation, real estate appraisers do not differentiate the invested capital value from the equity value. Real estate appraisal methods do not specifically derive an equity value if there is debt against the property.

Direct Capitalization Analysis

In a direct capitalization, estimates are made of the potential gross income ("PGI") that might be expected from rental of the real estate and of rent losses and expenses that might be incurred by an owner/lessor. The resulting net income is then capitalized at an appropriate rate to indicate the value of the property. To develop the PGI, lease data from other properties are gathered and analyzed, providing an unadjusted rent range in terms of dollars per square foot. This data is supplemented through discussions with brokers regarding typical lease terms and rates for similar properties, to develop a market rent rate for the subject property. This estimate provides the adjusted rent per square foot, which is multiplied by the square footage of the property to determine the potential gross income of the property.

Exhibit 7.5 Sales Adjustment Grid

Description	Subject	Comparable I–1		Comparable I–2		Comparable I–3		Comparable I–4		Comparable I–5	
Address	1650 Critter Road	1060 East Campbell Road		25 East George Bush Freeway		267 East Campbell Road		2890 East Central Parkway		3502 Telecom Parkway	
City	Richardson, TX	Richardson, TX		Richardson, TX		Richardson, TX		Plano, TX		Richardson, TX	
Sale Date		August 2000		June 2000		May 1999		June 1998		April 1998	
Sale Price ($)		16,300,000		10,680,000		7,100,000		5,400,000		9,200,000	
Gross Building Area—GBA (SF)	117,339	109,043		120,000		54,950		70,939		100,310	
Price Per SF GBA ($)		149.48		89.00		129.21		76.12		91.72	
Year, Built	1999	1998		1997		1983		1983		1998	
Land Area (Acre)	6.9587	5.1100		9.0000		5.0900		4.1000		7.4700	
Zoning	LR-M(2), Local Retail	IM (Commercial)		CM (Commercial)		I (Industrial)		LC (Light Commercial)		M-1 (Commercial)	
Value Adjustments	**Description**	**Description**	**Adj.**	**Description**	**Adj.**	**Description**	**Adj.**	**Description**	**Adj.**	**Description**	**Adj.**
Property Rights Conveyed	Leased Fee	Leased Fee	0%	Leased Fee	0%	Leased Fee	0%	Leased Fee	0%	Leased Fee	0%
Financing	Cash To Seller	Cash To Seller	0%	Cash To Seller	0%	Cash To Seller	0%	Cash To Seller	0%	Cash To Seller	0%
Conditions of Sale	None	Occupied	0%	Vacant	15%	Occupied	0%	Occupied	0%	Owner Occupied	0%
Date of Sale (Time)	06-2001	08-2000	3%	06-2000	3%	05-1999	6%	06-1998	9%	04-1998	9%
Value after Trans. Adjust. ($/SF)		**153.97**		**105.42**		**136.96**		**82.97**		**99.97**	

Location/Condition	Suburban	Superior	–20%	Inferior	20%	Superior	–20%	Comparable	0%	Inferior	20%
Size	117,339	109,043	0%	120,000	0%	54,950	–10%	70,939	–5%	100,310	0%
Height	14’	14’	0%	14’	0%	12’	0%	10’	10%	14’	0%
Effective Age (Years)	3	2	0%	3	0%	16	25%	15	25%	0	0%
Land to Building Ratio	2.58:1	2.04:1	0%	3.27:1	0%	4.03:1	–10%	2.52:1	0%	3.24:1	0%
Parking Ratio	4.41 Per 1,000	4.10 Per 1,000	0%	1.67 Per 1,000	0%	7.95 Per 1,000	0%	3.00 Per 1,000	0%	4.00 Per 1,000	0%
Intended Use	Office	Office	0%	Office	0%	Office	0%	Office	0%	Office/Lab	10%
Number of Tenant	2	Single	0%	Single	0%	Single	0%	Multi	0%	Single	0%
Quality of Construction	Good	Comparable	0%	Comparable	0%	Slightly Inferior	10%	Inferior	30%	Comparable	0%
Functional Utility	No	No	0%	No	0%	No	0%	No	0%	No	0%
Zoning	LR-M(2), Local Retail	IM (Commercial)	0%	CM (Commercial)	0%	I (Industrial)	0%	LC (Light Commercial)	0%	M-1 (Commercial)	0%
Physical Adjustment			**–20%**		**20%**		**–5%**		**60%**		**30%**
Final Adjusted Value ($/SF)		**123.17**		**126.50**		**130.11**		**132.76**		**129.96**	

Other income, rent concessions, vacancy and collection losses, operating expenses, real estate taxes, insurance, management fees, maintenance, and replacement reserves related to the property are identified.

Subtraction of all vacancy and expenses from PGI, and addition of any other income, results in net operating income (NOI), which is then capitalized into an indication of value. This NOI is for a hypothetical owner for the following year and is not necessarily the NOI of the current owner. The NOI is calculated before interest expense or debt payment and income taxes. Replacement reserves, the expected capital expenditures required to keep up the property, may be subtracted to reach NOI depending, in part, on whether the source of the capitalization rate was derived from cash flows before or after replacement reserves. NOI before replacement reserves is similar to the measure of earnings before interests, taxes, depreciation and amortization (EBITDA) often used in business valuation.

Overall Capitalization Rate

To develop the capitalization rate, appropriate investment criteria and expectations are derived for the subject property based on an analysis of comparable sales and surveys of real estate investors. This is an area in which real estate appraisal differs significantly from business valuation. Some of the data on market capitalization rates is taken directly from actual transactions. However, other data is taken from surveys of real estate investors regarding their beliefs on capitalization rates. The following table summarizes the findings of a typical investor survey.

Dallas Office Market
Second Quarter 2001

Category	Range	Average
Discount Rate (IRR)	9.00% - 13.00%	11.43%
Overall Cap Rate (OAR)	8.00% - 12.00%	9.69%
Residual Cap Rate	8.00% - 12.00%	9.88%

The above information, along with capitalization rates derived from sales of similar properties, is then analyzed and reconciled to the investor surveys, resulting in an overall capitalization rate. This rate is also called the “going in” rate in real estate, as compared to the terminal or residual capitalization rate used in the DCF analysis.

Discounted Cash Flow Model Analysis

This method is especially meaningful in that it isolates the timing of the annual cash flows and discounts them, along with the expected reversion (terminal value), to a present value. The present value of the cash flow is added to the present value of the reversion, resulting in a total property value. A DCF is typically prepared for multi-tenanted commercial properties, often using lease analysis software where the lease terms for each lease may be analyzed.

Example

In the following example, a survey of institutional investors indicates that income-producing properties are typically held for a minimum of seven to fifteen years. Because the last tenant lease expires in year 9, we used a ten-year cash flow period after the last tenant is released through their option, or a new tenant is found. A ten-year period has been used in the analysis of the subject with the eleventh year NOI used to determine the reversion.

Alternative investment opportunities and expectations are then analyzed, including the prime rate, discount rate, 3- and 6-month treasury bills, notes and bonds. From this a yield rate is determined. Due to the long-term nature of real estate investment, real estate returns are often compared to those available on ten-year Treasury bonds as well as corporate and government bonds held to maturity. These securities are highly marketable and typically feature fixed periodic interest payments and a return of the initial principal at the end of the term, with a value prior to the redemption highly sensitive to interest rate fluctuations. The face value of this type of debt, as well as the interest payments, is also subject to real erosion due to inflation.

Terminal Capitalization Rate

The terminal capitalization rate is applied to the NOI estimated for the year following the end of the holding period. The investor survey suggests a range of terminal capitalization rates of 8 to 12 percent, with an average of 9.88 percent. Terminal capitalization rates are generally higher than "going in" rates, due to the risk associated with projecting future income levels, although both are highly dependent on near term releasing exposure. The subsequent buyer of the subject property would be acquiring an asset with an average risk of releasing over the next ten years.

Given the subject's particular location, physical quality, occupancy, and tenant condition, a terminal capitalization rate of 9.75 percent is considered appropriate since the subject has multi-tenant occupancy that might provide more stable income during tenant move-out. This estimate is based on a stable level of occupancy during the reversion year and subsequent immediate years.

The DCF analysis is shown in Exhibit 7.6

Reconciliation

In an appraisal report, an appraiser will consider all three approaches, explain which was used, and explain how the various conclusions of value were reconciled into a final conclusion. If the subject property is an income producing property, the income approach is the primary approach to value. The sales comparison approach may also be considered very reliable if both investors and users are buying similar properties in the market. The cost approach may then serve as a secondary check on the income and sales comparison approaches to value.

Exhibit 7.6 DCF

PROSPECTIVE PRESENT VALUE

Cash Flow Before Debt Service plus Property Resale

Discounted Annually (Endpoint on Cash Flow & Resale) over a 10-Year Period

Analysis Period	For the Year Ending	Annual Cash Flow	P.V. of Cash Flow @ 10.00%	P.V. of Cash Flow @ 10.25%	P.V. of Cash Flow @ 10.50%	P.V. of Cash Flow @ 10.75%	P.V. of Cash Flow @ 11.00%	P.V. of Cash Flow @ 11.25%	P.V. of Cash Flow @ 11.50%	P.V. of Cash Flow @ 11.75%	P.V. of Cash Flow @ 12.00%
Year 1	Sep-2002	$1,282,053	$1,165,503	$1,162,860	$1,160,229	$1,157,610	$1,155,003	$1,152,407	$1,149,823	$1,147,251	$1,144,690
Year 2	Sep-2003	$1,276,077	$1,054,609	$1,049,832	$1,045,087	$1,040,374	$1,035,692	$1,031,043	$1,026,425	$1,021,837	$1,017,281
Year 3	Sep-2004	$1,269,902	$954,096	$947,620	$941,203	$934,843	$928,542	$922,296	$916,106	$909,972	$903,891
Year 4	Sep-2005	$ 795,541	$543,365	$538,453	$533,597	$528,796	$524,047	$519,353	$514,710	$510,120	$505,581
Year 5	Sep-2006	$1,519,199	$943,303	$932,657	$922,154	$911,792	$901,571	$891,486	$881,537	$871,720	$862,034
Year 6	Sep-2007	$1,511,828	$853,388	$841,842	$830,479	$819,295	$808,285	$797,448	$786,780	$776,278	$765,939
Year 7	Sep-2008	$1,504,237	$771,911	$759,742	$747,791	$736,054	$724,528	$713,208	$702,089	$691,167	$680,441
Year 8	Sep-2009	$1,496,420	$698,091	$685,527	$673,217	$661,156	$649,337	$637,754	$626,404	$615,281	$604,379
Year 9	Sep-2010	$868,935	$368,513	$361,061	$353,775	$346,652	$339,688	$332,879	$326,222	$319,712	$313,346
Year 10	Sep-2011	$914,375	$352,532	$344,618	$336,900	$329,372	$322,029	$314,865	$307,876	$301,058	$294,405
Total Cash Flow		$12,438,567	$7,705,311	$7,624,212	$7,544,432	$7,465,944	$7,388,722	$7,312,739	$7,237,972	$7,164,396	$7,091,987
Property Resale @ 9.25% Cap		$21,646,378	$8,345,616	$8,158,292	$7,975,583	$7,797,365	$7,623,518	$7,453,925	$7,288,473	$7,127,052	$6,969,554
Total Property Present Value			$16,050,927	$15,782,504	$15,520,015	$15,263,309	$15,012,240	$14,766,664	$14,526,445	$14,291,448	$14,061,541
Rounded to Thousands			$16,051,000	$15,783,000	$15,520,000	$15,263,000	$15,012,000	$14,767,000	$14,526,000	$14,291,000	$14,062,000
Per SqFt			$136.79	$134.50	$132.27	$130.08	$127.94	$125.85	$123.80	$121.80	$119.84

ADDENDUM 2—UNDERSTANDING MACHINERY AND EQUIPMENT APPRAISALS

Introduction

The appraisal of machinery and equipment ("M&E") is not as widely written about or as regulated as real estate appraisal. M&E appraisals tend to be less location-specific than real estate. M&E appraisers often possess specific expertise about industries or assets, such as aircraft, marine vessels, utilities, or petrochemical and natural resources industries.

M&E appraisers are not subject to the same state licensing criteria as real estate appraisers, but the issue has been discussed by regulatory authorities and appraisal organizations. The Uniform Standards of Professional Appraisal Practice ("USPAP") does include sections on Personal Property Appraisal, Development (Standard 7), and Personal Property Appraisal, Reporting (Standard 8).

Purpose of the Appraisal

The purposes for M&E appraisals may include:

- Allocation of purchase price, either in conjunction with the other assets of a going-concern such as current assets, real estate, intangible assets, and goodwill, or a stand-alone analysis
- Financing, where a lender may wish to know the value of the assets being financed in the open market
- Insurance, whether the terms of a policy are based on actual cash value or a Cost of Replacement or Cost of Reproduction—New
- Litigation, where an expert witness is required
- Leasing, whether for off balance sheet financings or for determining a residual value
- Property Tax, where the value of personal property is required for determining the appropriateness of the assessment

While some M&E appraisers choose to specialize in one of these niches, others are generalists.

How to Find a Machinery and Equipment Appraiser

The two largest personal property organizations are the American Society of Appraisers ("ASA"), which has a Machinery & Technical Specialties Committee ("M&TS"), and the Association of Machinery & Equipment Appraisers, ("AMEA"). Both organizations are very active, promote continuing education and have minimum requirements to receive professional designations. They each have searchable web sites to locate qualified appraisers and require their members to adhere to USPAP.

The M&TS Committee of the ASA (*www.appraisers.org/disciplines/machinery.htm*) has a web site that discusses educational courses, definitions of value, and information relating to the *M&TS Journal*, which is published four times per year. There are also links to purchase one of the few publications on this area, a text-

book titled *Valuing Machinery and Equipment*. This textbook describes the three approaches to value for machinery and equipment, typical methodologies employed, and examples of calculating loss of value via physical depreciation, functional and economic obsolescence. The requirements to receive an ASA (Accredited Senior Appraiser) designation include five years of experience, passing technical and ethics examinations and submitting sample reports to a peer review board.

The AMEA (*www.amea.org*) differs from ASA by requiring its Accredited Equipment Appraisers ("AEA") to be employed by a Machinery Dealers National Association ("MDNA") member firm. This requires involvement in the buying, selling and/or appraising of M&E for the last three years. They must also pass a written ethics examination, and submit sample reports for AMEA and USPAP compliance.

Standard and Premise of Value

The ASA published definitions of value for M&TS are[14]:

Fair Market Value. The estimated amount, expressed in terms of money, that may reasonably be expected for a property in an exchange between a willing buyer and a willing seller, with equity to both, neither under any compulsion to buy or sell, and both fully aware of all relevant facts, as of a specific date.

Fair Market Value—Removal. The estimated amount, expressed in terms of money, that may be reasonably expected for a property, in an exchange between a willing buyer and a willing seller, with equity to both, neither under any compulsion to buy or sell, and both fully aware of all relevant facts, as of a specific date, considering the cost of removal of the property to another location.

Fair Market Value In Continued Use. The estimated amount, expressed in terms of money, that may be reasonably expected for a property in an exchange between a willing buyer and a willing seller, with equity to both, neither under any compulsion to buy or sell, and both fully aware of all relevant facts, including installation, as of a specific date and assuming that the business earnings support the value reported. This amount includes all normal direct and indirect costs, such as installation and other assemblage costs to make the property fully operational.

Fair Market Value Installed. The estimated amount, expressed in terms of money, that may be reasonably expected for an installed property in an exchange between a willing buyer and a willing seller, with equity to both, neither under any compulsion to buy or sell, and both fully aware of all relevant facts, including installation, as of a specific date. This amount includes all normal direct and indirect costs, such as installation and other assemblage costs, necessary to make the property fully operational.

Orderly Liquidation Value. The estimated gross amount, expressed in terms of money, that could be typically realized from a liquidation sale, given a reasonable period of time to find a purchaser (or purchasers), with the seller being compelled to sell on an as-is, where-is basis, as of a specific date.

[14] American Society of Appraisers, *Valuing Machinery and Equipment* (2000), p. 2.

F*orced Liquidation Value*. The estimated gross amount, expressed in terms of money, that could be typically realized from a properly advertised and conducted public auction, with the seller being compelled to sell with a sense of immediacy on an as-is, where-is basis, as of a specific date.

The *Fair Market Value In Continued Use* and *Fair Market Value–Installed* concepts consider asset value as part of a going concern, and give consideration to installation and various indirect costs. These two definitions of value are commonly used for mergers and acquisitions, and the prior term takes into consideration whether the earnings of the subject company are adequate to support the concluded values. This usually requires coordination among the business valuation analyst and real and personal property appraisers. This will be discussed in more detail under the assumed earnings portion of this chapter.

The *Orderly Liquidation Value* and *Forced Liquidation Value* premises of value reflect value in exchange, with *Forced Liquidation Value* generally considered to be an auction value, with a relatively short time period to advertise and conduct an auction. An *Orderly Liquidation Value* will consider a longer timeframe to advertise and locate interested parties.

Identifying and Reporting Assets to Be Appraised

If there is a large number of assets to be appraised, for example machinery and equipment located within a factory, M&E appraisers will ask for direction in determining how to set up the reporting process. Following a client's chart of accounts may be required. This enables the new inventory of assets and values to be uploaded into the client's fixed asset reporting system for financial reporting or tax reporting purposes. If a particular chart of accounts is not specified, the M&E appraiser will typically use a fairly common set of accounts and classifications.

As described in *Valuing Machinery and Equipment*, "accounts are major groupings of assets that are similar in character. The most basic separation of tangible assets into accounts would be land, buildings (or structures), land improvements, and machinery and equipment. The machinery and equipment account can be further broken down into various "classes" such as production machinery, general plant equipment, office furniture and fixtures, and other classes."[15]

In some M&E engagements, a client may supply a list of the assets to be appraised, and the appraiser accepts the list without verifying the existence or condition of each asset by physical inspection. Examples of this type of engagement are "desktop" appraisals where there is no physical inspection or engagements using a sampling technique, where only the largest and most valuable assets are inspected. Some engagements, such as in a purchase of a company with multiple locations, require only the inspections of the largest manufacturing facilities. The appraiser will then use furnished information to value minor facilities such as offices and warehouses. These techniques may be appropriate for the purpose of the valuation, but they should be disclosed in the report to avoid misleading the client or other intended user.

[15] American Society of Appraisers, *Valuing Machinery and Equipment* (2000), p. 24.

Approaches to Value

The three approaches to value are all considered in valuing M&E, although the income approach is not commonly employed in determining the value of an individual piece of machinery and equipment. An income stream can rarely be isolated for a particular piece of machinery. It is used, however, in valuing integrated manufacturing facilities or production lines, or quantifying the after-tax penalties for obsolescence. The cost approach and market approach are widely used.

Cost Approach

The cost approach allows each individual asset to be appraised, and is the best determinant of value for a special-purpose asset or one without an active secondary market. The appraiser will determine the *Reproduction Cost New* or *Replacement Cost New*. The reproduction cost new is the cost to create an exact duplicate of the subject, while a replacement cost new is the cost to create one with equal capacity and utility as the subject, but using current technology. The difference between them is the possible existence of excess capital costs, a form of functional obsolescence. Some of the possible methods an appraiser will use in determining the *current cost new* would include:

1. Direct Unit Pricing
2. Trending
3. Cost/Capacity

Direct Unit Pricing Method. In the direct unit pricing method, the M&E appraiser inventories the assets at the facility, and records identifying information such as manufacturer, model and serial number, year manufactured, description, capacity, and drive. This inventory includes comments relating to the machine's installation in the facility such as foundation, power and utility connections, and indirect factors such as costs of installation and engineering. Each asset is individually identified and valued, unless its value is beneath the client's capitalization policy, where it will be grouped by like-kind and valued as a single line-entry. The Reproduction or Replacement Cost is determined by reviewing a variety of data including published cost information manuals, manufacturers' price lists, databases, and Internet based data.

Trending Method. In the trending method, the M&E appraiser can use the existing accounting records as the basis for the inventory of assets to be valued. An advantage of using the existing records is ease of integrating the "new" values to the old fixed asset listing, allowing a reconciliation of the new values to the historical net book values. The disadvantage of using existing accounting records is the possibility of unrecorded retirements. The presence of such "ghost" assets, that linger on the books years after being physically retired, may result in excess depreciation charges affecting earnings. Two other problems in trending are:

1. Inaccurate historical costs and book values due to purchase accounting treatment in past acquisitions.

2. Duplication of costs incurred for rebuilding or retrofitting recorded when the asset was first placed in service and again at a later date.

To make trending techniques more meaningful appraisers use a battery limit, or unit of production method, where costs will be known to manufacture an entire facility, or major component of a process plant. This unit of production method results in a check on the sum of the trended individual costs for that facility as a whole, without commenting upon each individual line item.

Cost/Capacity Method. In the Cost Capacity method, the costs of similar equipment or process plants can vary based on size or capacity, raised to a power.[16] The formula is expressed as:

$$(C_2 / C_1) = (Q_2 / Q_1)^x$$

In this formula, C_2 is the desired cost of capacity Q_2. C_1 is the known cost of capacity Q_1. These costs are scaled using factors typically called the six-tenths factor, where costs can be scaled up or down within reasonable ranges. Examples of this technique may also be found in *Valuing Machinery and Equipment*.[17] This cost capacity approach may also be used in conjunction with a trending approach for facilities that have known construction costs (e.g., petrochemical plants, steel mills, or other integrated facilities). The cost capacity formula is used as a check on the reasonableness of the sum of the trended costs for a facility, in part or in whole.

Depreciation and Obsolescence. These costs are adjustments to value, accounting for physical depreciation, and functional and economic obsolescence. The ASA defines these three adjustments as follows:

Physical deterioration is the loss in value or usefulness of a property due to the using up or expiration of its useful life caused by wear and tear, deterioration, exposure to various elements, physical stresses, and similar factors.

Functional obsolescence is the loss in value or usefulness of a property caused by inefficiencies or inadequacies of the property itself, when compared to a more efficient or less costly replacement property that incorporates new technology. Symptoms suggesting the presence of functional obsolescence are excess operating costs, excess construction costs (excess capital costs), overcapacity, inadequacy, lack of utility, or similar conditions.

Economic obsolescence (sometimes called "external obsolescence") is the loss in value or usefulness of a property caused by factors external to the property, such as increased cost of raw material, labor, or utilities (without an offsetting increase in product price); reduced demand for the product, increased competition, environmental or other regulations; inflation or high interest rates, or similar factors.[18]

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[16] Jelen, Frederic and James Black, *Cost and Optimization Engineering,* 2nd ed. (New York: McGraw Hill, Inc., 1983), p. 333.

[17] American Society of Appraisers, *Valuing Machinery and Equipment* (2000), p. 64.

[18] *Ibid.,* p. 70.

Physical Depreciation. Physical depreciation is commonly applied using an effective age/whole life ("age/life") technique, where the appraiser will make an estimate of the effective age of the machinery and the machinery's whole life. Effective age is commonly defined as the age of an asset, in comparison with a new asset of like kind. It gives consideration to rebuilding and maintenance that will extend a property's service life. Economic life is the estimated total life of an asset and can be estimated by the sum of the effective age of an asset plus the asset's remaining useful life. Remaining useful ("economic") life is the estimated period during which a property of a certain age is expected to continue to be profitably used for the purpose for which it was intended. It can be approximated by deducting the asset's effective age from its economic life.

The formula is:

$$[\text{Effective Age} / (\text{Effective Age} + \text{Remaining Useful Life})] \times 100 = \% \text{ of Physical Deterioration}$$

Appraisers will often use depreciation charts reflecting loss in value for various types of equipment and industries. There are published sources, such as those by Marshall & Swift in the *Marshall Valuation Service,* that have their origins in Bulletin F, published by the Internal Revenue Service in the early-1900s. While useful, it is difficult to determine the source data for these studies; hence their reliability is questionable. Statistical analysis of historical retirement behavior, or survivor curves, is also used in determining the average service life and remaining useful life of similar assets. The best known of these studies are the Iowa curves, published in the 1930s at Iowa State University.[19] These are survivor curves, not depreciation curves, and should be used with proper statistical analyses. The best estimate of physical depreciation is often based on a combination of an appraiser's personal inspection of the assets, an age/life analysis, and information obtained from interviews with local site engineers and maintenance management.

Functional Obsolescence. Functional obsolescence ("FO") includes an investigation of excess construction and operating costs. Excess construction costs are something that a buyer would be unwilling to pay because of advancements in technology. Examples include obsolete construction materials, an inefficient layout that was built piecemeal over many years in a process plant, technology contained in control systems or the existence of many smaller production units versus a larger, more efficient one. The best way to identify FO is to ask plant engineering management what they would replace or revise if they could build a new facility of the same capacity and utility.

Excess operating costs occur when the property's design results in operating inefficiencies causing higher costs for the subject being valued in comparison to a modern replacement. This form of functional obsolescence, sometimes called operating obsolescence, is measured by estimating the difference in operating expenses between the subject and the modern replacement. Typical expenses to

[19] Ellsworth, Richard, "The Valuation of Industrial Facilities," *The Machinery & Technical Specialties Journal,* Vol. 15, No. 3, p. 22.

investigate include labor, materials and supplies, utilities, yield, and taxes. Examples might include excess material movement between portions of a facility, or operating costs for HVAC and utilities in underutilized clean rooms in a pharmaceutical facility. The excess costs of operating the subject asset compared to the modern replacement design is calculated, reduced by the tax rate, and calculated by the present value of the excess operating cost penalty over the remaining life of the penalty.

Example. In underutilized clean rooms, both excess construction costs and excess operating costs may exist. The excess operating costs would be developed based on actual costs for operating the entire facility and allocating a portion of those costs to the unused areas. The primary factors would be utility costs such as heating, ventilating, and air-conditioning, chilled water, electrical, dust collection, and maintenance.

An estimate would be made of the remaining life of the property reflecting the time the excess operating costs would continue to exist. The present value of the annual excess operating cost penalty over the probable life expectancy would be determined based on an after-tax rate of return on a constant-dollar basis.

To convert this annual excess operating cost penalty into an indication of obsolescence, it would be necessary to discount the penalty over the remaining life of the cost disadvantage. For the discount rate, a Weighted Average Cost of Capital ("WACC") of, say, 13 percent could be used based on an analysis of the pharmaceutical industry. Since the operating cost penalties are discounted on a constant-dollar basis and the discount rate includes an amount for anticipated inflation, the effect of anticipated inflation is removed, which is approximately 2.5 percent based on various studies on or around the appraisal date. Therefore, the discount rate applied for operating cost penalties on a constant-dollar basis is 10.5 percent (13.0 – 2.5 percent). This penalty was calculated using the physical remaining life of 15 years.

An indication of operating obsolescence is developed as follows:

Annual Excess Operating Cost Penalty	$ 327,429
Less Tax Benefit @ 40.9%	133,918
Annual Excess Operating Cost (after-tax)	193,511
Present Value Factor	7.394
Operating Obsolescence	$1,430,820
Rounded	$1,400,000

Economic Obsolescence. Economic obsolescence ("EO") is the loss in value resulting from external influences to the subject property. These may be global, national, regional or local factors, including political and governmental regulations. In determining whether this obsolescence exists, a review is made of the economics of the subject property compared to its industry as of the appraisal date. Typical examples of economic obsolescence include reduced demand for products, overcapacity, increased costs of raw materials, and regulations requiring capital expenditures.

Use of an income approach or sales comparison approach will include the quantification of economic obsolescence, as both approaches include all forms of depreciation and obsolescence. The appraiser may not independently separate an amount for EO. In the cost approach, the quantification of EO can be an important consideration. There are several methods for quantifying economic obsolescence.

Utilization can be used as an indicator of EO by comparing a facility's actual utilization to its design utilization, with the use of the previously described "six-tenths" scale factor. As an example, let's assume a facility is operating at 70 percent utilization due to a lack of demand in the market. The design capacity is 90 percent. The formula for determining the penalty for EO is expressed as follows:

$$\begin{aligned} EO &= (1 - (\text{Demand} \div \text{Capacity})^{0.6}) \times 100 \\ &= (1 - (70 \div 90)^{0.6}) \times 100 \\ &= (1 - .86) \times 100 \\ &= 14\% \end{aligned}$$

The reduction in utilization may indicate EO, and may be taken as a penalty against the assets being valued. It may be applicable to all the assets of a company, or may be applicable to the manufacturing machinery and not the real estate. If actual utilization is at a normal operating level, that does not necessarily indicate the absence of EO. The earnings can be reviewed and compared to industry norms to quantify it. Foreign competition may be the cause for lower profitability due to lower labor costs, lower levels of regulatory requirements, or government subsidies. Other measures that may help identify a loss of profitability include return on capital, where a mean return on capital for an industry can be compared to the subject industry returns; equity to book, where source data such as Standard & Poor's can result in ratios of stock price to book value; and margin analysis, by reviewing current margins to prior margins. Correlating these indicators results in an estimate of economic obsolescence.[20]

Sales Comparison (Market) Approach

The sales comparison approach includes an analysis of recent sales and current offerings of similar pieces of machinery. It can also be the most supportable approach in terms of market indicators. There are many published and on-line sources of market data for machinery and equipment, and many analysts have large databases of sales to use in the valuation of individual assets. This approach is often used in determing value for financing purposes, where the premise of value would be in exchange to another user; or in an allocation of purchase price, where the market value would be adjusted upwards to consider the costs to install the machine at the subject company.

The strength of the sales comparison approach is the ability of an active marketplace to contemplate all forms of depreciation, whether physical, functional or economic. The identification of comparable sales and offerings of similar property

[20] Remsha, Michael, "Economic Obsolescence," *The Machinery & Technical Specialties Journal,* Vol. 16, No. 1.

is similar to that in real estate, although the reporting process is different, as the valuation of large numbers of assets does not permit adjustment grids to be included in a report. Similarities include adjustments for effective age, size (capacity), condition, location, and exposure period.

Once adjustments are made to comparable sales and asking prices, fair market value in continued use can be arrived at by adding allowances for freight, wiring, installation, and all other direct and indirect costs necessary to assemble the property as an integrated, functioning unit. The approach considers some or all of the following market evidence: sales through public auctions, catalogs of similar machine units offered for sale, and discussions with local and national brokers.

Income Approach

The income approach is primarily used in the valuation of integrated production facilities or special-purpose assets, such as railcars, refineries, utilities, landfills, and mineral extraction. It is also used to quantify obsolescence penalties. Personal property appraisal typically includes the finite life of personal property. The concepts of present worth and life factors have their origin in Engineering Value and Depreciation, which describes Retirement Rate Analysis and Expectancy Life Factors.[21]

The use of direct capitalization and discounted cash flow analysis and development of discount rates is discussed elsewhere in the book.

Assumed Earnings

One way of measuring external or economic obsolescence is to test whether the earnings of a business support the value of the assets otherwise concluded. In other words, if all the tangible and intangible assets of a company are appraised and the total value of those assets added together is greater than the overall value of the business, then economic obsolescence is suggested. This type of analysis is usually performed in conjunction with a business valuation analyst. Most M&E appraisers will not test the adequacy of a company's earnings to support the concluded values when valuing machinery that is part of a going concern. If they do not, they will include a paragraph disclaiming that to the reader. For example:

> We did not investigate any financial data pertaining to the present or prospective earning capacity of the operation in which the designated assets are used. It was assumed that prospective earnings would provide a reasonable return on the appraised value of the designated assets, plus the value of any assets not included in the appraisal, and adequate net working capital. If prospective earnings are not adequate to justify ownership of the assets at the appraised levels, then the concluded fair market value as reported here must be reduced accordingly.

Asset value will be affected by the ability of the entity being valued to have sufficient earnings to support concluded values for various components of a going concern, as illustrated in Exhibit 7.7.

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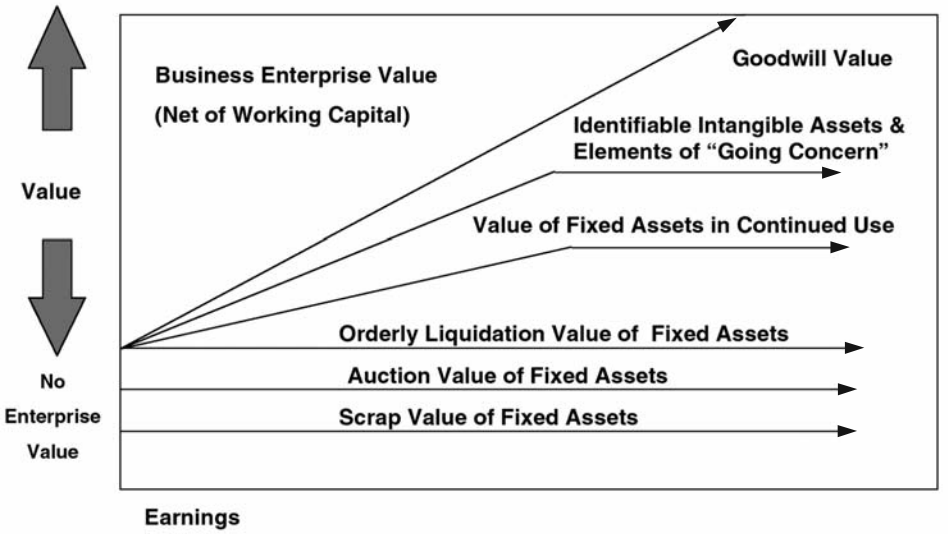
[21] Ellsworth, Richard, "The Valuation of Industrial Facilities," *The Machinery & Technical Specialties Journal,* Vol. 15, No. 3.

Exhibit 7.7 Present Worth of Future Benefits of Ownership



If a business enterprise valuation (BEV) has been performed, a test for economic obsolescence can be made by ensuring the working capital, real estate, personal property, and intangible assets fit within the BEV. If the sum of components is in excess of the BEV, then obsolescence exists and values may be reduced accordingly. That obsolescence should be directed first to those assets causing the obsolescence, or if the penalty cannot be identified to one component, it may be spread among the appropriate assets. As a going concern's profitability is reduced, the value of the real and personal property cannot be less than its value in the marketplace. If there are no earnings, the assets may be entered at orderly or forced liquidation value.

Assets that are nonoperating, and not contributing to the earnings of the operation, may be viewed as excess assets. They are not required for on-going operations. Examples might be unused or abandoned buildings and idled production lines. If there are no plans for these assets to be used in future operations, they should be valued using a value in exchange premise, similar to orderly liquidation, as they are not contributing to the earnings of the going concern. If a business valuation is being performed, the value in exchange of the nonoperating assets can be added to the value of the business operations.

Construction in Progress

The construction in progress ("CIP") account is often overlooked, or improperly reconciled, when reviewing real and personal property valuations. This account includes projects not yet completed, and costs not capitalized as of the appraisal date. The CIP costs should be analyzed to ensure the expenditures have not been double-counted or missed. Occasionally, it may be difficult to distinguish between

real and personal property accounts. The real estate and M&E appraisers need to communicate with each other regarding how these assets will be treated. CIP should be investigated to determine whether the new construction will increase the value of the plant or just allow it to remain in business. For example, environmental expenditures may be costly to implement, but they do not increase the value of the operating plant on a dollar for dollar basis. CIP is either valued on its incremental value to the operating plant or, in some cases, on the basis of actual cost incurred as of the appraisal date. An argument can be made that EO should be applied to CIP in a similar manner as the other assets in the M&E accounts, as appropriate.

Summary

Machinery and equipment appraisal is a complex area usually performed by specialists. In certain situations, it may be appropriate to gain a better understanding of the techniques and information employed. Exhibit 7.8 can be used as a brief and general checklist.

Exhibit 7.8 Summary Checklist for the Business Valuation Analyst When Working with Personal Property Appraisers

____	Is the appraiser designated by an appropriate appraisal organization, and does the appraiser possess experience in the industry or asset type being valued?
____	Were the assets physically inspected, or valued based upon information furnished by the client?
____	If a cost approach is used, was the cost of reproduction or replacement cost determined by trending, direct pricing or cost/capacity relationship? If a trending technique is used, were the original costs subject to prior purchase accounting treatment, and stepped up or down?
____	How was overall depreciation accounted for in the cost approach? What effective ages and useful lives were employed?
____	Are there any bottlenecks or nonoperating portions of the facility? Is there any indication of functional or economic obsolescence?
____	What is the current utilization of the facility compared to its designed capacity?
____	What is the industry norm for the utilization rate?
____	If there are nonoperating assets, were they included at a liquidation or auction value, reflecting their lack of contribution to the going concern?
____	Is there anything at the facility that would be done differently today if a new one were to be built?
____	Have Construction In Progress costs been identified and reconciled to ensure they are included if within the scope of the project, and properly reconciled between the appraisers working on the assignment?
____	If there are real estate and personal property appraisers working on an engagement, have they reconciled the treatment of assets that may not be easily identified as real or personal property?

ADDENDUM 3—REVENUE PROCEDURE 77-12

1977–1C.B. 569

Section 1. Purpose.

The purpose of this Revenue Procedure is to set forth guidelines for use by taxpayers and Service personnel in making fair market value determinations in situations where a corporation purchases the assets of a business containing inventory items for a lump sum or where a corporation acquires assets including inventory items by the liquidation of a subsidiary pursuant to the provisions of section 332 of the Internal Revenue Code of 1954 and the basis of the inventory received in liquidation is determined under section 334(b)(2). These guidelines are designed to assist taxpayers and Service personnel in assigning a fair market value to such assets.

Sec. 2. Background.

If the assets of a business are purchased for a lump sum, or if the stock of a corporation is purchased and that corporation is liquidated under section 332 of the Code and the basis is determined under section 334(b)(2), the purchase price must be allocated among the assets acquired to determine the basis of each of such assets. In making such determinations, it is necessary to determine the fair market value of any inventory items involved. This Revenue Procedure describes methods that may be used to determine the fair market value of inventory items.

In determining the fair market value of inventory under the situations set forth in this Revenue Procedure, the amount of inventory generally would be different from the amounts usually purchased. In addition, the goods in process and finished goods on hand must be considered in light of what a willing purchaser would pay and a willing seller would accept for the inventory at the various stages of completion, when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts.

Sec. 3. Procedures for Determination of Fair Market Value.

Three basic methods an appraiser may use to determine the fair market value of inventory are the cost of reproduction method, the comparative sales method, and the income method. All methods of valuation are based on one or a combination of these three methods.

.01 The cost of reproduction method generally provides a good indication of fair market value if inventory is readily replaceable in a wholesale or retail business, but generally should not be used in establishing the fair market value of the finished goods of a manufacturing concern. In valuing a particular inventory under this method, however, other factors may be relevant. For example, a well balanced inventory available to fill customers' orders in the ordinary course of business may have a fair market value in excess of its cost of reproduction because it provides a continuity of business, whereas an inventory containing obsolete merchandise unsuitable for customers might have a fair market value of less than the cost of reproduction.

.02 The comparative sales method utilizes the actual or expected selling prices of finished goods to customers as a basis of determining fair market values of those

finished goods. When the expected selling price is used as a basis for valuing finished goods inventory, consideration should be given to the time that would be required to dispose of this inventory, the expenses that would be expected to be incurred in such disposition, for example, all costs of disposition, applicable discounts (including those for quantity), sales commissions, and freight and shipping charges, and a profit commensurate with the amount of investment and degree of risk. It should also be recognized that the inventory to be valued may represent a larger quantity than the normal trading volume and the expected selling price can be a valid starting point only if customers' orders are filled in the ordinary course of business.

.03 The income method, when applied to fair market value determinations for finished goods, recognizes that finished goods must generally be valued in a profit motivated business. Since the amount of inventory may be large in relation to normal trading volume the highest and best use of the inventory will be to provide for a continuity of the marketing operation of the going business. Additionally, the finished goods inventory will usually provide the only source of revenue of an acquired business during the period it is be being used to fill customers' orders. The historical financial data of an acquired company can be used to determine the amount that could be attributed to finished goods in order to pay all costs of disposition and provide a return on the investment during the period of disposition.

.04 The fair market value of work in process should be based on the same factors used to determine the fair market value of finished goods reduced by the expected costs of completion, including a reasonable profit allowance for the completion and selling effort of the acquiring corporation. In determining the fair market value of raw materials, the current costs of replacing the inventory in the quantities to be valued generally provides the most reliable standard.

Sec. 4. Conclusion.

Because valuing inventory is an inherently factual determination, no rigid formulas can be applied. Consequently, the methods outlined above can only serve as guidelines for determining the fair market value of inventories.

CHAPTER 8

Valuation Discounts and Premiums

Two of the fundamental tools used by valuation analysts are discounts, which reduce the value of interests in closely held businesses, and premiums, which increase the value of those interests. The courts have recognized the validity of discounts and premiums, at the conceptual level, for many years. Increasingly, recent tax cases have shown an evolving sophistication on the parts of both the courts and the valuation experts as regards the determination and application of discounts and premiums.

Valuation discounts and premiums arise from the basic concepts of control and marketability. A minority shareholder, whether in a publicly held or a privately held company, is often a passive investor with little or no input into how the company is run. In addition, a minority shareholder in a privately held company faces difficulty in finding ready buyers for his or her shares.

This chapter focuses primarily on the most commonly applied discount, the discount for lack of marketability, and the most commonly applied premium, the control premium (or inversely the minority discount). Discounts for lack of control[1] (DLOC) quantify the level of risk assumed by a noncontrolling shareholder. Discounts for lack of marketability (DLOM) quantify the degree to which liquidity is impaired relative to more liquid alternative investments.

The data supporting discounts is covered in some detail later in the chapter, as is the nature of the underlying income streams. The chapter also discusses other discounts, such as the discounts for dependence on a key person, a restrictive agreement, or built-in capital gains. The chapter ends with an analysis of seminal court cases concerning the application of discounts and premiums. For examples on the application of discounts see Chapters 9, 12, 19, and 24.

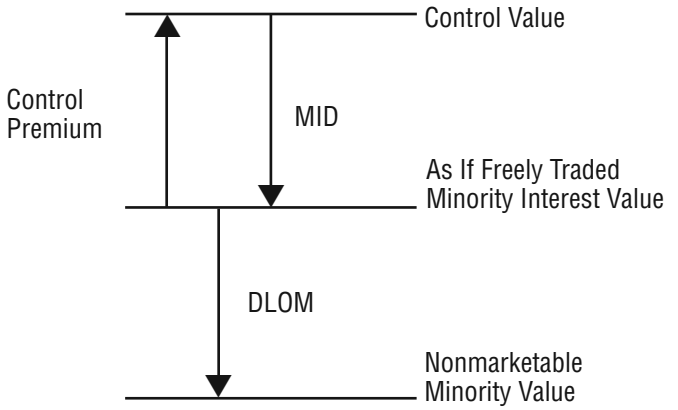
LEVELS OF VALUE

Discounts and premiums typically are applied near the end of a valuation engagement after the initial analysis is completed. If the initial analysis produces a minority interest value, then depending on the nature of the engagement, a control premium may be added to reach a control value or a marketability discount may be taken to lower the value.

[1] The discount for lack of control is often referred to as minority interest discount (MID) and the terms are used interchangeably in this chapter. However, it is important to note that majority shareholders can lack full control.

To illustrate the concept graphically, the valuation community has historically used a relationship chart (see Exhibit 8.1). This chart, which continues to evolve, shows the various bases to which a premium or discount would be applied.

Exhibit 8.1 Levels of Value (Old View)



The chart shows the various applications of a control premium, a discount for lack of control (or minority discount), and a discount for lack of marketability (or marketability discount). To understand the chart, start with the horizontal line in the center of the drawing. This level represents a marketable, minority value. To change this to a control value (represented by the horizontal line at the top of the chart), it is necessary to add a control premium. To obtain a nonmarketable minority value (represented by the horizontal line at the bottom of the chart), a discount for lack of marketability is applied to the base marketable minority value.

This interpretation of the chart assumes that the initial valuation analysis has produced a marketable minority value. Obviously, this is not always the case. If the initial analysis produced a control level of value, then the base becomes the top horizontal line. To move this value to the nonmarketable minority value line at the bottom of this chart, it is necessary to make two discount calculations. First take a minority discount (the inverse of the control premium) to reach the marketable minority level, and then take a lack of marketability discount.

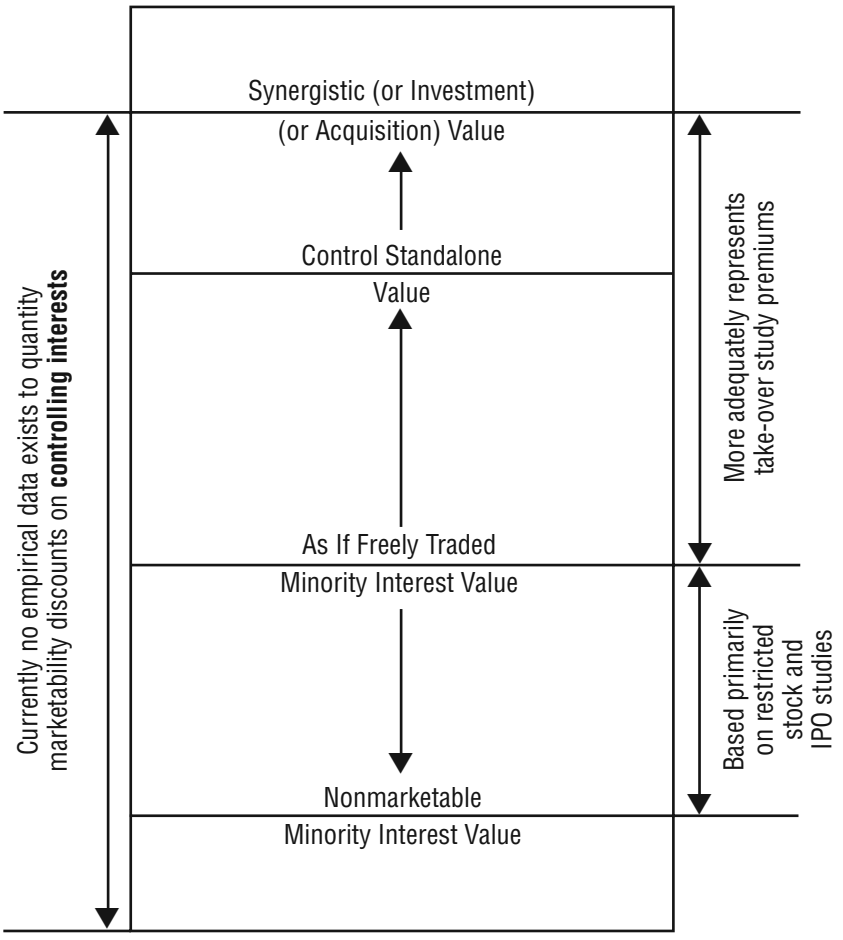
Note that when applying discounts, the process is multiplicative rather than additive. If, for example, there was a 20 percent minority interest discount and a 20 percent marketability discount, then the total discount is *not* 20 percent + 20 percent = 40 percent; rather, it would be:

$$(1 - (1 - 20\%) \times (1 - 20\%)) = 36\%.$$

This simplistic Levels of Value illustration has in reality become more complex and not without controversy. The chart suggests that no discount for lack of marketability should be applied to controlling interests, a point on which many analysts

disagree. More accepted is the addition of a horizontal line above the control value level to reflect an acquisition or synergistic value. If added, the chart would look more like Exhibit 8.2.

Exhibit 8.2 Levels of Value (New View)



The original chart (Exhibit 8.1) also suggested that the control value is always greater than the marketable minority interest value, but there is an exception. If there is no control premium, then the control value and the marketable minority value may be the same.

Exhibit 8.3 presents a newer view on the interaction of the levels of value based, in part, on the method of valuation and the resultant value.

Exhibit 8.3 Levels of Value (Newer View)

- Control strategic (public or private company)
- Minority/control standalone marketable (public company)
- Control marketable (private company)
- Control standalone (private company)
- Minority nonmarketable (private company)

Control strategic can be for a public and a private company. An example of minority/control standalone marketable is the value resulting from the application of the guideline public company method (Chapter 6). Some analysts believe it is a minority value and some believe it is minority and control. An example of control marketable is the value derived from the application of the income approach (with control cash flows) where the discount or cap rate is based on returns from the public marketplace. Control standalone is the value of a private company after application of the income approach with a discount to reflect the lesser marketability of a control interest in a private company vs. public stock. Minority nonmarketable is after the application of all discounts. Some of these "levels" of value may be higher or lower than the others depending on the circumstances.

CLASSIFYING DISCOUNTS

ValTip

Discounts and premiums may be classified as "entity level" or "shareholder level" depending on whether the driver for the premium or discount affects the entity as a whole, such as an environmental discount, or whether the driver reflects the characteristics of the shareholder's ownership.

Entity-Level Discounts

All valuation methodologies discussed in this book lead to value conclusions that are, ideally, based on sound assessments of risk concerning the:

- Subject company
- Industry
- Economy

These factors are referred to collectively, as enterprise factors. That is, the value of the company is dependent on our assessment of these enterprise factors. There may be, however, other factors that would affect the company as a whole. Discounts that apply at the company or entity level include:

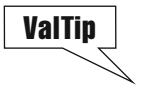
- Key-person discounts
- Contingent liability discounts (hazardous waste, etc.)

- Contingent litigation discounts
- Small company risks
- Nonhomogeneous assets discounts
- Customer/supplier base discounts (limited customers, loss of suppliers, etc.)
- Blockage and/or market absorption discounts

Some analysts reflect these discounts by increasing the rate of return (income approach) or by reducing the multiple (market approach).

Shareholder-Level Discounts

Other factors, such as the number of shareholders, the existence of a shareholders' agreement, and the like, would not, at least at this point in the valuation process, affect the value conclusion. This is because the number of shareholders or the existence of a shareholders' agreement is a *shareholder-* or *security-specific* factor or attribute rather than a company-specific factor. Although there may be isolated exceptions, control premiums and discounts for either lack of control or lack of marketability account for or measure the degree of these shareholder- or security-specific factors. The primary premiums that may be applied are control premiums and acquisition (strategic) premiums.



Control premiums *quantify the value of controlling the destiny of the company*. Acquisition or strategic premiums *quantify the quality of a particular investment as viewed by a specific investor(s)*. There is empirical evidence of the size of these acquisition premiums. However, these data do not separate the two types of premiums.

Far too often, control premiums have been overstated by the use of these combined data (control and strategic premiums) as a proxy for control premiums only.

Lack of control and marketability are not unrelated. A majority shareholder may be able to affect marketability in ways that a minority shareholder cannot. Pursuing a sale, a merger, or an initial public offering are examples of such situations. Thus, the two discounts, while separate, should be considered in conjunction with each other.

Controversial Issues

Several undecided issues in the valuation community have either a direct or indirect effect on the discounts and premiums applied to a base of value. The major areas of debate are whether:

- Public companies trade at a control or minority interest value
- There are marketability discounts that are applicable to control values
- Control-related adjustments should be made in all valuation engagements
- Restricted stock and initial public offering studies serve as "starting point" proxies for lack of marketability of minority interests
- The use of discounted cash flow (DCF) models or option pricing models is a sound tool for determining marketability discounts of minority interests

Some of these issues are hotly debated in the valuation community while other issues are less controversial. We address these issues throughout this chapter and give the reader, at the very least, viable options to consider. When taking a position on one of these controversial issues, analysts must be thoroughly prepared to defend their position.

DISCOUNTS FOR LACK OF CONTROL AND CONTROL PREMIUMS

Advantage of Control/Disadvantages of Lack of Control

ValTip

From the point of view of the minority shareholder, the majority shareholder's ability to control can reduce or eliminate the return on the minority shareholder's investment.

Some examples of the actions the majority shareholder could take that would reduce the return on the minority shareholder's investment are:

- *Paying excess compensation and perquisites* to the majority shareholder, to his or her relatives, or to others without giving a proportionate benefit to the minority shareholder. The perks could include paying for trips, meals, autos, retirement plans, medical care, or education expenses. Paying higher compensation and expenses reduces the earnings of the corporation by distributing those funds to the majority shareholder or his or her designee.
- Having *favorable dealings with the corporation*. The majority shareholder could enter into various transactions with the corporation on terms and conditions favorable to him or her. For example, the majority stockholder could:
  - Lease a building to the corporation at higher-than-market rates
  - Borrow funds from the corporation at a lower-than-market interest rate or lend funds to the company at a higher-than-market interest rate

- Hold corporate board of directors meetings in a favorite resort location, and reimburse the board of directors but not the minority shareholders for attending these meetings
- Decide to invest in certain opportunities personally rather than on behalf of the corporation
- Cause the corporation to support charities or make investments of the shareholder's choosing
- Take some actions to force the minority shareholder out of investment in the corporation
- Merge the corporation with another corporation, seeking to cash out the minority investor instead of offering that investor the opportunity to continue with his or her investment
- Sell all or substantially all of the corporate assets, or liquidate and dissolve the corporate entity
- Have the corporation go through a reverse stock split, thereby reducing the number of shares in the corporation. (For example, a 1-for-10 reverse stock split would reduce a shareholder's nine shares to 9/10 of a share. Under some state laws, such a fractional share may be bought out for fair value.)

In most states, majority control is not absolute. A majority shareholder may have certain duties to other shareholders of the company, including a fiduciary responsibility to manage the company in a way that provides for the benefit of all shareholders. Officers and directors may have a duty of loyalty and, therefore, a duty not to deprive the corporation of favorable business opportunities. States also vary in the way they define control. In some "supermajority" states, it may require a vote of more than 51 percent in certain corporate governance matters.

Limiting the Risk of the Minority Position

There are various ways to protect a minority shareholder from the full risk of the minority shareholder position, thereby reducing the amount of the discount for lack of control. These break down as follows.

Public Market Liquidity

If the company is a public company, the shareholder can readily liquidate his or her investment in the stock if he disagrees with the policies of management.

Rights and Restrictions Through Agreements

These may take several forms

Articles of Incorporation. The articles of incorporation may include allocations of rights, such as creation of multiple classes of stock with each class entitled to elect certain directors. Also, in certain transactions, such as the sale of substantially all of the company's assets or a merger, a majority of each class of stock may be required to approve corporate actions.

Cumulative Voting. Bylaws may provide for cumulative voting that may allow minority shareholders to elect some of the board of directors.

Preemptive Rights. Preemptive rights in the bylaws would allow all shareholders the opportunity to keep their pro rata share upon the issuance of additional stock in the company as opposed to having their interest diluted by the majority shareholder issuing additional shares to him- or herself at an attractive price.

Superior Majority. There could be requirements for a superior majority for certain corporate actions. For example, instead of requiring a 51 percent approval to increase the company president's salary, a 75 percent approval might be required, thereby giving a 30 percent shareholder effective veto power in that situation. Some states have "supermajority vote requirements" for some major corporate actions such as mergers and liquidations.

Shareholder Agreements. Shareholder agreements can set forth the rights and responsibilities of each of the shareholders under various circumstances. For example, a buy-sell agreement could require either the majority shareholder or the corporation to buy back the minority shareholder's stock at a set price or set formula upon the occurrence of some event, such as death or retirement of the shareholder; or a minority shareholder could force the company or the majority shareholder to buy stock at a set price under a "put" option.

Employment Agreements. Employment agreements may give further protection to a minority shareholder who also works for the corporation to ensure that he or she will not be discharged and therefore lose the benefits of being an employee.

Right of First Refusal. If the majority shareholder has a right of first refusal, minority shareholders are free to sell their stock to anyone they choose at any price they choose, but the majority shareholder would have the right to match the price and buy the stock as opposed to having a third party buy the stock. However, a buy-sell agreement and right of first refusal also can give the minority shareholder an opportunity to buy out the majority shareholder upon certain events, such as death or disability.

Other Agreements. Other agreements can restrict or combine voting rights. For example, a group of shareholders, typically minority shareholders, may form a voting trust, agreeing to vote their stock as a block and thereby achieving a majority position.

Judicial Remedies

Courts often have found a fiduciary responsibility on the part of a majority shareholder not to operate the company in a way that unreasonably disadvantages the minority shareholders. Sometimes courts will enforce such a duty on a majority shareholder who sells an interest to a third party, but the third party does not purchase the interest of the minority shareholder. Frequently a minority shareholder is discharged as an employee, and that, coupled with a lack of dividends, may precipitate a judicial review. Under the statutes of a majority of the states, noncontrolling stockholders, under certain circumstances, can bring suit to dissolve the corporation.

Appraisal Rights

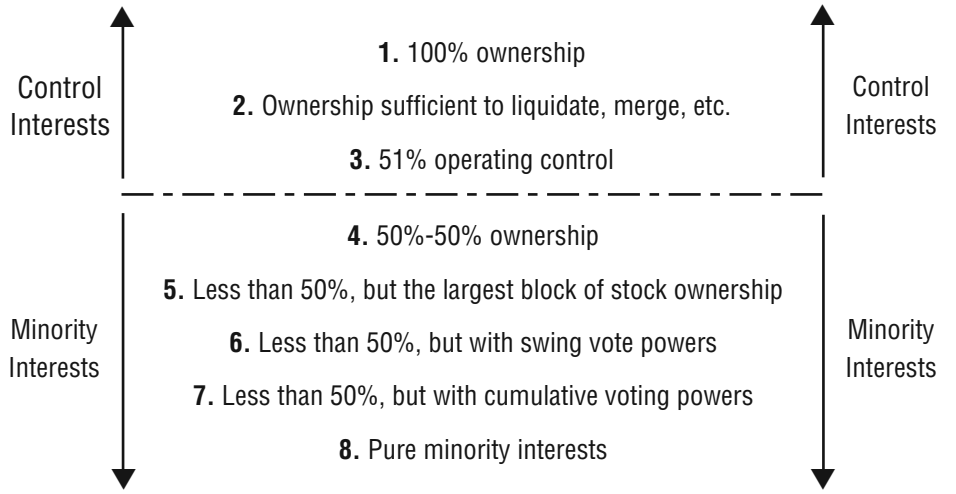
A merger and certain other transactions involving the stock, including allegations of violation of fiduciary responsibilities, may give the minority shareholder appraisal rights—that is, the right to have the stock appraised and to sell such stock either to the company or to the majority shareholder for fair value. Frequently, exercising these ap-

praisal rights requires very strict adherence to complex procedural rules. Failure to follow the procedural requirements exactly may prevent a minority shareholder from meeting the requirements for judicial enforcement of appraisal rights. Typically, minority shareholders ask the court to protect them, since a failure to do so may be inequitable.

Levels of Noncontrolling Interests

There are varying degrees in ownership from the pure minority interest position to a 100 percent controlling interest. Starting at the highest level of ownership, the ownership pecking order may look something like what is shown in Exhibit 8.4.

Exhibit 8.4 Levels of Ownership



To begin, consideration of the amount of the noncontrolling interest must be determined. As identified above, levels 3 and 4 represent, respectively, the weakest controlling interest and the strongest noncontrolling interest. Courts generally view any interest greater than 50 percent as a controlling interest, absent, however, factors and/or agreements to the contrary. Interests of exactly 50 percent are common but, unfortunately, raise additional control/noncontrol issues. Although those 50 percent interests lack control, they do generally have veto power. This veto power gives rise to corporate stalemates and, sometimes, corporate dissolution due to disputes between 50-50 shareholders.

The first level of control is one holding a 51 percent or more interest, but less than any "supermajority" qualifying level of interest that may exist in that jurisdiction. As stated earlier, a "greater than 50 percent interest" does not imply, necessarily, the ability to effect liquidation, merger, or any other fundamental change of the company. In some states, as well as in some corporate charters, a two-thirds majority or more is required to liquidate, restructure, or approve a merger. Accordingly, a position of ownership that is insufficient to effect these types of major corporate changes should be assigned a lower value on a per-share basis. The

next level of control is for those supermajority interests that have the power of liquidation and merger yet hold less than 100 percent of the stock.

Where there are interests of less than 50 percent representing the largest block, they may very well be in a quasi-controlling position. Unfortunately, these interests may have little control over their future when compared to an interest in a true controlling position. An interest of less than 50 percent, but with cumulative voting powers, could secure for a minority shareholder a seat at the board table. A seat on the board of directors could be significant, as it would ensure that a minority shareholder's voice would be heard. Accordingly, such an interest with voting power may have a smaller discount for lack of control than an otherwise identical stock without cumulative voting and other factors being equal.

Other important issues relative to the position of the minority interests are the ownership of the other interests. *Fragmentation* ownership of the other interests can play an important role on the level of input a minority shareholder will have. For example, a 10 percent shareholder may have more input than any one of the ten 1 percent shareholders would have. The corresponding 90 percent shareholder may tend to be more responsive to the 10 percent minority shareholder than to any one of the ten 1 percent shareholders.

David W. Simpson wrote an important article dealing with these issues of ownership. In his article, Simpson illustrated the effects of the ownership interests one might have in relation to the interests of others (see Exhibits 8.5 to 8.7).[2]

Exhibit 8.5 Effects of Ownership Interests

	A	B	C
Factors leading to a ***smaller*** discount for a greater than 50% block.	Equity interest sufficient to liquidate block, merge or restructure.	Equity interest permits control of the Board of Directors	Fragmented ownership of the remaining interest in the company.
Factors leading to a ***larger*** discount for a greater than 50% block.	Equity interest insufficient to liquidate, merge, or restructure.	Cumulative voting: Interest cannot control the entire Board of Directors.	Concentrated ownership of the remaining interest in the company.

Exhibit 8.6 Effects of Ownership Interests

	A	B	C
Factors leading to a ***smaller*** discount for a block of less than 50% of the equity.	Equity interest sufficient to suppress a merger, liquidation or restructure.	Cumulative voting: Interest is sufficient to affect the Board of Directors.	Fragmented ownership of the remaining interest in the company.
Factors leading to a ***larger*** discount for a block of less than 50% of the equity	Equity interest insufficient to suppress a merger, liquidation, or restructure.	Interest cannot affect the Board of Directors.	Concentrated ownership of the remaining interest in the company.

[2] David W. Simpson, "Minority Interest and Marketability Discounts: A Perspective: Part I," *Business Valuation Review* (March 1991).

Exhibit 8.7 Effects of Ownership Interests

	Least Impaired
Greater than 50% equity interest	
100% Ownership	1
Less than 100% Interest	
Interest sufficient to liquidate, merge, or restructure	2
Interest insufficient to liquidate, merge, or restructure	
Interest permits control of the Board	3
Cumulative voting: Can't control entire board	
Fragmented remainder[a]	4
Concentrated remainder[b]	5
Less than 51% equity interest	
Interest sufficient to suppress merger, liquidation, etc.	
Cumulative voting: Interest can affect Board	
Fragmented remainder	6
Concentrated remainder	7
Interest cannot affect Board	
Fragmented remainder	8
Concentrated remainder	9
Interest insufficient to suppress merger, liquidation, etc.	
Cumulative voting: Interest can affect Board	
Fragmented remainder	10
Concentrated remainder	11
Interest cannot affect Board	
Fragmented remainder	12
Concentrated remainder	13
	Most Impaired

Ranking

[a] Fragmented ownership of remaining interest in company

[b] Concentrated ownership of remaining interest in company

His article concluded with a chart of ownership interests with 13 levels of impairment of control based on the levels of ownership interest.

It is important to note that ranking number 12, "Interest that cannot affect Board, Fragmented remainder," could very likely be less impaired than another interest of another company with a ranking of, say, 4. This is due to the nature of the controlling shareholder and their treatment of minority shareholders.

Control Premium Studies

ValTip

The determination or the quantification of the amount of the discount for lack of control (or the minority discount) is difficult due to the lack of empirical evidence in this area.

One of the few sources of data comes from the analysis of acquisitions of public companies. If the price paid for the entire company exceeds the market capitalization of the company prior to announcement of the acquisition, then that difference is a control premium. The *Control Premium Study*, a quarterly publication from Mergerstat, L.P. tracks acquisition premiums for completed transactions involving publicly traded target companies where a controlling interest was acquired.[3] The simple formula below converts the control premium to a minority discount:

$$\text{DLOC} = 1 - \frac{1}{1 + \text{Control Premium}}$$

where:

DLOC = Discount for lack of control

ValTip

The Mergerstat data include synergistic and acquisition premiums along with the control premium, and segregation of these premiums is difficult.

Using the Guideline Public Company Method to Arrive at a Minority Value

One common method for obtaining the fair market value of a minority interest in a closely held company is to correlate the various valuation multiples of guideline companies with the closely held company in the market approach technique known as the guideline public company method. Since this methodology is generally accepted to produce a minority interest value, it is not necessary to calculate or apply a minority interest discount. Note that it is the minority value that is determined and *not* the amount of the discount for lack of control or minority discount.

While many analysts accept that the market approach using guideline publicly traded companies yields a minority value, many other experts disagree and believe that the guideline public company method may, in fact, not result in a minority interest value *even though the market prices are those of minority interests*. According to Eric Nath:

> I have concluded that demonstrable control premiums are rare in public companies, and that, for the most part, statistics on control premiums provide little or no useful information when attempting to estimate the fair market value of a controlling interest in a private company.

[3] Mergerstat L.P. also publishes the *Mergerstat Review,* which provides an annual Control Premium Study.

> Therefore, valuation of a private company using a publicly traded comparative should result in a *majority interest value*.[4]

Some analysts also believe that the application of public company valuation multiples to control cash flow results in a control value. Since a multiple is really a cap rate, this position may not be that different than the same concept for the income approach as presented below, which is generally accepted.

Control and the Income Approach

ValTip

The use of minority cash flows in the income approach produces a minority interest value. As discussed in Chapter 4, minority cash flows are those cash flows *without* any adjustments due to controlling shareholders actions such as excess compensation, rent payments, or perquisites.

In regard to the income approach to value, Dr. Shannon Pratt et al. states: "Of these two analytical components [cash flow and the capitalization rate], the more significant influence on the control versus noncontrol ownership level in the income approach is found in the numerator—the expected economic income—rather than in the denominator—the discount or capitalization rate."[5]

When valuing a minority interest, it is sometimes preferable to start with a minority interest rather than take on the additional work and risk of error involved in discounting back to a minority value from a control value. Conversely, when valuing a controlling interest, it may be easier to start with a control value than to add a control premium.

However, the argument for making control-related adjustments was made in the September 1992 article in *Business Valuation Review*.[6] The authors stated: "While it is true that the minority shareholder in a privately held company may not be able to control management salaries and other expense items, we feel that by not adjusting the financial statements to market levels the value of the minority interest will be, in most cases, unacceptably low, or in fact zero." They also said: "it is not always the case that a minority shareholder is unable to influence the levels of expenses." Furthermore, they indicate that "we believe that by not adjusting the financial statements there is potential for what would effectively be a double

[4] Eric Nath, "Control Premiums and Minority Interest Discounts in Private Companies," *Business Valuation Review* (June 1990). Emphasis added.
[5] Shannon P. Pratt, Robert F. Reily, and Robert R. Schweihs, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies,* 4th ed. (New York: McGraw-Hill, Inc.), p. 371.
[6] William C. Herber, Patrick K. Smith, and Robert J. Strachota, "Fairness in Minority Interest Valuation," *Business Valuation Review* (September 1992).

discount."[7] Unfortunately, the authors did not suggest a method for quantifying the discount for lack of control.

Consistency is important. Whether you start with control cash flows or minority cash flows, it is important to apply this methodology consistently throughout your minority value engagements.

DISCOUNTS FOR LACK OF MARKETABILITY

The concept of *marketability* deals with the liquidity of the interest—that is, how quickly and certainly it can be converted to cash at the owner's discretion. For this text, we define *marketability* as "the ability to quickly convert property to cash at minimal cost," using the definition provided by the *International Glossary of Business Valuation Terms*.

Marketability expresses the relative ease and promptness with which a security or commodity may be sold when desired, at a representative current price, without material concession in price merely because of the necessity of the sale.

The Internal Revenue Service (IRS) speaks to the concept of marketability in Revenue Ruling 77-287, which addresses the concept of restricted stock. It touches on many important issues regarding general marketability discount theory and practice as well as detailing the IRS's position relative to the marketability of restricted stocks.

With respect to the investment characteristics of assets, the terms "marketability" and "liquidity" are sometimes used interchangeably. The *International Business Valuation Glossary* defines liquidity as "the ability to quickly convert property to cash or pay a liability."

In the context of business valuations, the terms "marketability" and "liquidity" are often loosely used. For example, the restricted stock of a public company is not very marketable, whereas unrestricted stock of a private business, although not liquid, is marketable in the sense that one may seek a buyer for it at a discounted

[7] The authors were assuming that one would not consider control adjustments in the first place and then second, apply a discount for lack of control.

price. Most analysts do not make distinctions between liquidity and marketability and capture both elements in the marketability discount applied to closely held companies.

Other factors being equal, publicly traded securities are more marketable than the securities of private concerns, and securities with restrictions are generally less marketable than securities without restrictions. David W. Simpson, in the second part of his article on minority interest and marketability discounts, illustrated the levels of marketability or, more specifically, the factors that would tend to increase or decrease the discount for lack of marketability.[8] The illustration is shown in Exhibit 8.8.

Exhibit 8.8 Factors Affecting Marketability

	A	B	C	D
Factors leading to a ***smaller*** discount for lack of marketability	Publicly traded	No restrictions on the sale of the securities	Registered securities	Active market relative to the size of the block in question
Factors leading to a ***larger*** discount for lack of marketability	Closely held	Restrictions on the sale of securities	Unregistered securities	Thin market relative to the size of the block in question

Marketability Discounts for Controlling Interests

There has been an ongoing debate as to whether a discount for lack of marketability should be applied or even considered when valuing a controlling interest. The opponents of marketability discounts are fairly consistent in their arguments that the lack of marketability is included in the pricing of the controlling interest. Proponents of discounts believe some discount should be made over and above the discount rate or price multiple based upon the valuation method employed.

ValTip

While some experts support a discount, there remains no direct empirical evidence to support a discount for the lack of marketability for a controlling interest. Remember that all the initial public offering and restricted stock studies deal with minority interests and not controlling interests.

[8] David W. Simpson, "Minority Interest and Marketability Discounts: A Perspective: Part II," *Business Valuation Review* (June 1991).

Selling a controlling interest in a privately held company is a difficult task. For that matter, so is selling a controlling interest of a publicly held company. However, a controlling interest in a privately held corporation is certainly "locked in" for a period of time, and it is obviously more than the three days or so that are typically needed to transact a publicly held minority interest.

A national survey revealed that, on average, it took approximately six months from listing to close the sale of a small private business.[9] The interest is subject to additional costs and risks not incurred by interests in publicly held securities. The privately held company is uncertain not only of the time required for the sale but also of the eventual sales price. In addition, there are substantially more costs in preparing for the sale, such as business valuation services and accounting and legal costs. To further complicate things, it is quite likely the sale will not transact for cash but for some deferred payments or notes, assuming the buyer will not back out at the last minute.

Proponents of a DLOM point out that these costs and risks greatly exceed the cost of normal transfers of publicly held stock and that this justifies a marketability discount. They argue that discounts for lack of marketability exist, even in the absence of empirical data. When discounts for lack of marketability for controlling interests exist, they tend to be smaller than discounts for lack of marketability of minority interests. The U.S. Tax Court has recognized discounts for lack of marketability of controlling interests.

Many analysts believe that discounts for lack of marketability for controlling interests generally range from 0 to 20 percent, depending on the specific facts and circumstances and the prediscount valuation method employed.

EMPIRICAL EVIDENCE OF MARKETABILITY DISCOUNTS

There is no dissension in the valuation community concerning the applicability of a lack of marketability discount to a minority interest in a privately held company. There are a number of studies and a wealth of empirical evidence supporting such a discount.

ValTip

DLOM studies are usually based on two types of analyses:

1. Studies based on the difference between the initial public offering (IPO) price of a company and transactions in the same company's stock prior to the IPO. These are referred to as IPO studies.
2. Studies that measure the difference between the private price of a restricted security and the publicly traded stock price of the same company. These are referred to as restricted stock studies.

[9] *Business Broker,* Vol. 18, No. 9 (September 1999).

Initial Public Offering Studies

Several IPO studies since 1980 have analyzed the stock prices of companies before and after they became public. The Emory studies are without a doubt the most extensive and, over these past 20 years or so, have been relied on by many valuation experts as empirical evidence of marketability discounts. Other studies have followed, some extending Emory's data and other developing data of their own.

Emory Studies[10]

Since 1980, John D. Emory has been researching the value of stocks before and after they became public companies. Emory has published numerous IPO studies starting in January 1980 and ending March 2000. These studies have been published in *Business Valuation Review*, a journal of the Business Valuation Committee of the American Society of Appraisers.

Emory states: "It was my thought that if I could relate the prices at which private transactions took place before the initial public offering to the price at which the stock was offered subsequently to the public I would be able to gauge, in a somewhat objective way, the value of marketability."

In his first eight studies (1/80–4/97) Emory reviewed over 2,200 prospectuses and analyzed 310 transactions. He eliminated development-stage companies, companies with operating losses, and companies with IPO prices less than $5 per share. All of the transactions took place within a five-month period prior to the IPO. In that regard Emory states, "since an initial public offering often takes four or five months from conception to completion, the transactions mentioned in the prospectuses in the study would almost certainly have reflected the likelihood of marketability within the next half year and any other value adjustment associated with being a public company."

According to Emory, companies in the transactions of the study:

> were promising in nature, and their securities had good potential for becoming readily marketable. Why else would investors have bought the unregistered stock and why would a bona fide investment banker pursue a firm underwriting commitment? It should be noted that almost all of the major investment banks are represented as lead underwriters of the IPOs used in this study, as has been the case in the previous studies.

In general, most of the transactions were with promising companies where marketability was probable.

The transactions in the study were primarily the granting of stock options at the stock's then fair market value. The remaining transactions involved sales of stock. Of the 310 transactions studied, 239, or 77 percent, were stock options.

In defending the stock option prices used by the companies in the studies, Emory states "in most cases, the transactions were stated to have been, or could reasonably be expected to have been, at fair market value. All ultimately would have

[10] John D. Emory, "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock (eighth in a series), November 1995 through April 1997," *Business Valuation Review* (September 1997), pp. 123–124. Also *Business Valuation Review* (September 2000), pp. 111–121, and Emory Business Valuation, LLC (*www.emorybizval.com*).

had to be able to withstand Securities and Exchange Commission [SEC], IRS or judicial review, particularly in light of the subsequent public offering."

The mean and median discounts for lack of marketability indicated by the aggregate of Emory's eight studies of transactions that occurred five months prior to an IPO were 44 and 43 percent, respectively. For the most recent period studied, November 1995 to April 1997, the mean discount was 43 percent and the median discount was 42 percent (see Exhibit 8.9).

Exhibit 8.9 Summary of the Emory Studies

Period of Study	Number of Transactions	Mean Discount	Median Discount
May 1997–December 2000[a]	283	50%	52%
May 1997–December 2000[b]	36	48%	44%
May 1997–March 2000[c]	53	54%	54%
November 1995–April 1997	91	43%	42%
January 1994–June 1995	46	45%	45%
February 1992–July 1993	54	45%	44%
August 1990–January 1992	35	42%	40%
February 1989–July 1990	23	45%	40%
August 1987–January 1989	27	45%	45%
January 1985–June 1986	21	43%	43%
January 1980–June 1981	13	60%	66%
Combined Results[d]	593	47%	48%

(a) The Expanded Study
(b) The Limited Study
(c) The Dot.Com Study
(d) To avoid double counting, transactions from the Dot.Com and Limited Study are included only as a part of the Expanded Study

The following is a brief explanation of each study:

- *January 1, 1980–June 20, 1981.* Emory reviewed private placements of securities taking place prior to initial public offerings. The difference between the price of a security sold prior to the IPO and the offering price is the discount for lack of marketability. Emory examined 97 prospectuses of securities offered in the period from January 1, 1980, through June 30, 1981. Of the 97 IPOs, he chose 13 that involved "financially sound" companies and transactions that took place no more than five months prior to the IPO. Emory found that the private placements sold at a mean discount of 60 percent and a median of 66 percent.
- *January 1985–June 1986.* Emory analyzed 21 IPOs and the transactions taking place immediately before the offerings. His analysis showed that the mean discount of the securities before the offerings is 43 percent with a median of 43 percent. Emory attributed the difference between the mean of this study (43 percent) and the mean of a similar study he performed in 1980 (60 percent) to the fact that the market for initial public offerings in 1986 was more active.
- *August 1987–January 1989.* Emory reviewed the prospectuses of 98 IPOs, of which 27 met the study criteria of financial soundness, an IPO price greater than $5, and transactions taking place five months before the offering. He found that

the mean discount of the securities sold before the initial public offering is 45 percent with a median of 45 percent.

- *February 1989–July 1990*. Emory's analysis of transactions of 23 companies showed that the mean discount for lack of marketability is 45 percent with a median of 40 percent.
- *August 1990–January 1992*. Out of 35 transactions, Emory found that the mean discount on the price of the securities was 42 percent with a median of 40 percent.
- *February 1992–July 1993*. Emory reviewed the transaction data of 54 companies selling securities in IPOs. He found that the average discount on the price of the securities was 45 percent with a median of 44 percent. Consolidating the results of the six studies that he has performed, he found that the mean discount of the total 173 transactions to be 47 percent.
- *January 1994–June 1995*. Emory evaluated 46 IPO transactions. Both the mean and median discounts on the purchase price of the securities before the IPO were 45 percent. The discounts ranged from 79 to 6 percent. Emory combined the results of all seven studies and found that the mean discount for the 219 transactions to date in all the studies was 45 percent and the median was 43 percent.
- *November 1995–April 1997*. Emory evaluated 91 transactions. The mean and median discounts on these transactions were 43 and 42 percent, respectively. The range of discount was 5 to 85 percent. The combined results of the 310 transactions to date in all the Emory studies indicated a mean discount of 44 percent and a median discount of 43 percent.
- *May 1997–March 2000 (Dot.Com Companies)*. For the first time, Emory included Dot.Com companies in his study, and evaluated 53 transactions. The mean and median discounts on these transactions were 54 percent.
- *May 1997–December 2000*. Emory prepared two studies based on his review of 1,847 IPO prospectuses over this period. In his "limited" study, he analyzed 36 transactions and found a mean discount of 48 percent and a median discount of 44 percent. In his "expanded" study, he broadened his search and did not eliminate companies on the basis of financial strength. The "expanded" study analyzed 283 transactions and found a mean discount of 50 percent and a median discount of 52 percent. Over the entire 11 studies from 1980 to 2000, the 593 transactions analyzed had a mean discount of 47 percent and a median discount of 48 percent.

Willamette Management Associates Studies[11]

Willamette Management Associates has published the results of 18 studies (time periods) that analyze IPO transactions that took place from 1975 to 1997. The premise of the studies was similar to that of the Emory studies; Willamette compared the sale price of stock placed privately before an IPO to the price at IPO to determine the discount for lack of marketability.

The Willamette studies, however, reviewed transactions that took place from 1 to 36 months before the initial public offering, whereas Emory analyzed transactions up to five months prior to IPO. Emory used information provided in the company prospectuses while Willamette used S-1 and S-18 registration statements which disclosed more information. Willamette also compared the price-earnings (P/E) multiple of the security at the time of the private transaction to the P/E multiple at the IPO.

[11] Pratt, Shannon P., *Business Valuation Discounts and Premiums* (New York: John Wiley & Sons, Inc., 2001), p. 84.

Willamette also made adjustments to reflect differences in market conditions between the dates. To do this, Willamette used an Industry P/E multiple at the time of offering and compared it to the Industry P/E multiple at the time of the private transaction.

Exhibit 8.10 presents the results of the Willamette studies.

Exhibit 8.10 Lack of Marketability Discount

Willamette Management Associates Summary of Discounts for Private Transaction
P/E Multiples Compared to Public Offering
P/E Multiples Adjusted for Changes in Industry P/E Multiples[a]

Period of Study	Median Discount
1975–1978	52.5%
1979	62.7%
1980–1982	56.5%
1983	60.7%
1984	73.1%
1985	42.6%
1986	47.4%
1987	43.8%
1988	51.8%
1989	50.3%
1990	48.5%
1991	31.8%
1992	51.7%
1993	53.3%
1994	42.0%
1995	58.7%
1996	44.3%
1997	35.2%

[a] Pratt, Shannon P., *Business Valuation Discounts and Premiums* (New York: John Wiley & Sons, Inc., 2001), p. 84.

Summary of the Emory and Willamette Initial Public Offering Studies

The range of discounts associated with both the Emory and Willamette IPO studies is from a low of 32 percent to a high of 73 percent. The majority of the discounts are in the range of 40 to 60 percent. As discussed later, critics of these studies are concerned with the reliability of both the pre-IPO prices and the IPO prices.

Hitchner Study No. 1

James R. Hitchner, CPA/ABV, ASA, in Atlanta, performed an additional analysis on the Emory study data. Emory reported average discounts for companies that had transactions in their stock within five months prior to IPO. Hitchner analyzed and calculated the discounts on transactions taking place in the fifth, fourth, and third months, respectively, prior to the date of the IPO to see if the discounts were higher for those companies that had transactions farthest from the IPO date. Hitchner also analyzed the discounts on transactions taking place up to five, four, and three months, respectively, prior to the date of the IPO. He also separately analyzed data on stock options only.

Discounts on transactions occurring between January 1980 and June 1995 were broken into fifth-, fourth-, and third-month analyses up to and including each period.

- *Fifth Month*. The mean and median discounts on the 47 transactions taking place in the fifth month prior to the IPOs were 54 and 50 percent, respectively. For the 219 transactions that took place within five months prior to the IPOs, the mean and median discounts were 45 and 43 percent, respectively.
- *Fourth Month*. The mean and median discounts on the 43 transactions that took place in the fourth month prior to the IPOs were both 51 percent. For the 172 transactions that took place within four months prior to the IPOs, the mean and median discounts were 43 and 42 percent, respectively.
- *Third Month*. The mean and median discounts on the 56 transactions taking place in the third month prior to the initial public offerings were 43 and 42 percent, respectively. For the 129 transactions that took place within three months of the initial public offerings (i.e. transactions at one, two, and three months prior to the initial public offerings), the mean and median discounts were 40 and 39 percent, respectively.

Discounts on transactions occurring between January 1994 and June 1995 also were broken into fifth-, fourth-, and third-month analyses, at only that monthly period.

- *Fifth Month*. For the most recent Emory study period, January 1994 to June 1995, the mean and median discounts on the 10 transactions that took place in the fifth month prior to the IPOs were 50 and 46 percent, respectively. The mean and median discounts on the 46 transactions that took place within five months prior to the IPOs were both 45 percent.
- *Fourth Month*. For the January 1994 to June 1995 study period, the mean and median discounts on the 17 transactions that took place in the fourth month prior to the IPOs were 48 and 50 percent, respectively. The mean and median discounts on the 36 transactions that took place within four months prior to the IPOs were 43 and 45 percent, respectively.
- *Third Month*. For the January 1994 to June 1995 study period, the mean and median discounts on the 11 transactions that took place in the third month prior to the IPOs were 44 and 43 percent, respectively. For the 19 transactions that took place within three months prior to the IPOs, the discounts were 39 and 38 percent, respectively.

Discounts on option transactions occurring between January 1980 and June 1995 were divided into fifth-, fourth-, and third-month analyses.

Most of the transactions included in the Emory study involved options. PHG analyzed the discounts on option transactions that took place in the fifth, fourth, and third months prior to the date of the initial public offerings.

- *Fifth Month*. The mean and median discounts on the 32 option transactions that took place in the fifth month prior to the IPOs for the aggregate Emory studies were 55 and 51 percent, respectively. The mean and median discounts on the 166 option transactions that took place within the five months prior to the IPOs were 44 and 43 percent, respectively.
- *Fourth Month*. The mean and median discounts on the 31 option transactions that took place in the fourth month prior to the IPOs for the aggregated Emory

studies were 52 and 51 percent, respectively. The mean and median discounts on the 134 option transactions that took place within four months prior to the IPOS were 42 and 41 percent, respectively.

- *Third Month*. The mean and median discounts on the 45 option transactions that took place in the third month prior to the IPOs for the aggregate Emory studies were 41 and 40 percent, respectively. The mean and median discounts on the 103 option transactions that took place within three months prior to the IPOs were 39 and 37 percent, respectively.

Discounts on option transactions occurring between January 1994 and June 1995 also were divided into fifth-, fourth-, and third-month analyses.

For the Emory study period, January 1994 to June 1995, the mean and median discounts on option transactions were 44 and 43 percent, respectively.

- *Fifth Month*. For the January 1994 to June 1995 study period, the mean and median discounts on the eight option transactions that occurred in the fifth month prior to the IPOs were 53 and 49 percent, respectively. The mean and median discounts on the 33 option transactions that took place within five months prior to the IPOs were 44 and 43 percent, respectively.
- *Fourth Month*. For the January 1994 to June 1995 study period, the mean and median discounts on the 12 option transactions that occurred in the fourth month prior to the IPOs were 47 and 48 percent, respectively. The mean and median discounts on the 25 option transactions that took place within four months prior to the IPOs were 42 and 38 percent, respectively.
- *Third Month*. For the January 1994 to June 1995 study period, the mean and median discounts on the nine option transactions that took place three months prior to the IPOs were both 43 percent. For the 13 option transactions that took place within three months prior to the IPOs, the discounts were 37 and 33 percent, respectively.

Hitchner Study No. 2

Hitchner performed a second analysis that was very similar to that performed by John Emory in his studies. Hitchner reviewed the prospectuses of guideline companies from February 1995 to June 1996 in the consulting industry that had gone public. This analysis focused on transactions that had taken place within the companies prior to their IPOs. Hitchner found 23 transactions that had taken place among 14 companies within 15 months of their IPO.

The mean and median discounts on the 23 transactions that took place prior (up to 15 months) to the initial public offerings were 51 and 52 percent, respectively.

- *Fifth Month*. The mean and median discounts on the transactions that took place in the fifth month prior to the IPOs were 49 and 53 percent, respectively. The mean and median discounts on the transactions that took place within five months prior to the IPOs were 44 and 36 percent, respectively.
- *Fourth Month*. The mean and median discounts on the transactions that took place in the fourth month prior to the IPOs were 56 and 57 percent, respectively. The mean and median discounts on transactions that took place within four months prior to the initial public offerings were 41 and 36 percent, respectively.

- *Third Month*. The mean and median discounts on the transactions that took place in the third month prior to the IPOs were both 31 percent. The mean and median discounts on the transactions that took place within three months prior to the IPOs were 31 and 35 percent, respectively. Exhibit 8.11 illustrates the analysis of the guideline company transactions.

Exhibit 8.11 Analysis of Transactions Occurring In Guideline Companies

Guideline Company		IPO Date	IPO Price ($)	Trans. Date	Trans. Price ($)	Type of Trans.	Disc.	Approx. No. of Mo.
Whittman Hart	(1)	5/3/96	16	12/31/95	6.49	Option	59%	4
Carnegie Group	(2)	12/4/95	8	3/1/95	*4.65	Option	42%	9
Cotelligent Group	(3)	2/14/96	9	9/8/95	2.70	Option	70%	5
Data Processing Res.	(4)	3/6/96	14	1/15/96	9.00	Option	36%	2
Data Processing Res.	(5)	3/6/96	14	6/1/95	2.25	Option	84%	9
Data Processing Res.	(6)	3/6/96	14	3/1/95	*2.25	Purchase	84%	12
Integrated Systems	(7)	4/18/96	5	1/31/95	1.52	Option	70%	15
Integrated Systems	(8)	4/18/96	5	11/17/95	3.33	Option	33%	5
Microware	(9)	4/3/96	10	5/2/95	3.13	Option	69%	11
Registry, Inc.	(10)	6/5/96	17	3/6/96	11.00	Option	35%	3
Registry, Inc.	(11)	6/5/96	17	4/1/96	*11.00	Option	35%	2
Registry, Inc.	(12)	6/5/96	17	5/1/96	*13.00	Option	24%	1
Ultradata	(13)	2/16/96	10	7/31/95	6.00	Option	40%	7
Ultradata	(14)	2/16/96	10	12/1/95	*7.25	Option	28%	3
Sykes	(15)	4/30/96	18	12/31/95	8.67	Option	52%	4
APAC	(16)	10/11/95	16	5/26/95	7.49	Option	53%	5
HCIA	(17)	2/22/95	14	2/1/94	*10.50	Option	25%	13
HCIA	(18)	2/22/95	14	4/1/94	*10.50	Option	25%	11
HCIA	(19)	2/22/95	14	10/1/94	*10.50	Option	25%	5
Idx	(20)	11/17/95	18	2/1/95	4.32	Option	76%	10
Mecon	(21)	12/7/95	13	3/31/95	0.57	Option	96%	8
UUNet	(22)	5/25/95	14	2/1/95	*6.00	Option	57%	4
UUNet	(23)	5/25/95	14	1/1/95	*5.00	Option	64%	5

Discounts	Mean	Median
Overall	51%	52%
At Five Months	49%	53%
Five Months or Less	44%	36%
At Four Months	56%	57%
Four Months or Less	41%	36%
At Three Months	31%	31%
Three Months or Less	31%	35%

*Only month and year of transaction available. Assumed the first of the month because specific day was not available.

Restricted Stock Studies

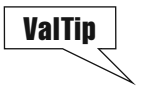
Additional support for the discount for lack of marketability can be found in the study of purchases of restricted securities by investment companies.

Investment companies regularly purchase private placements of restricted securities. Restricted securities may be issued and sold by a publicly traded company without prior registration with the Securities and Exchange Commission. These securities typically cannot be resold for a minimum period of one year under the SEC Rule 144 guidelines.

Because of the restriction on the marketability of the securities, the investment companies purchase the securities at prices lower than the price of a registered security of the same company. The difference between the two prices represents the discount for the lack of marketability.

In the 1970s, the SEC required investment companies to make their transaction records public. The availability of the records made it possible for analysts to directly determine the lack of marketability discount on securities purchased by investment companies and use it as a comparison for the discount on a closely held interest.

Revenue Ruling 77-287



The IRS, in Revenue Ruling 77-287, dealt with the issue of valuing restricted stocks. It was issued "to provide information and guidance to taxpayers, Internal Revenue Service personnel, and others concerned with the valuation, for Federal tax purposes, of securities that cannot be immediately resold because they are restricted from resale pursuant to Federal securities laws."

The ruling also discusses a study undertaken by the SEC, published in 1971 and covering the period from January 1, 1966, through June 30, 1969.[12] The SEC analyzed the purchases, sales, and holdings of restricted securities held by financial institutions that disclosed the valuation of their holdings. The average discount was about 26 percent for all companies.

In Accounting Release No. 113, the SEC acknowledged discounts for restricted securities.

> Restricted securities are often purchased at a discount, frequently substantial, from the market price of outstanding unrestricted securities of the same class. This reflects the fact that securities which cannot be readily sold in the public market place are less valuable than securities which can be sold, and also the fact that by the direct sale of restricted securities, sellers avoid the expense, time and public disclosure which registration entails.

[12] Securities and Exchange Commission, "Discounts Involved in Purchases of Common Stock (1966–1969)," *Institutional Investor Study Report of the Securities and Exchange Commission* (Washington, DC: U.S. Government Printing Office, March 10, 1971), Document No. 92-64, Part 5, pp. 2444–2456.

Securities and Exchange Institutional Investor Studies. Securities and Exchange Commission, "Discounts Involved in Purchases of Common Stock (1966–1969)," *Institutional Investor Study Report of the Securities and Exchange Commission* (Washington, DC: U.S. Government Printing Office, March 10, 1971), Document No. 92-64, Part 5, pp. 2444–2456.

	Period of Study
Mean Discount of 25.8 percent	1966–1969

The Securities and Exchange Commission reviewed purchases of restricted securities by investment companies for the period January 1, 1966 through June 30, 1969. This study was published in March 1971. It compared the prices at which the transactions of restricted securities were made to the prices of publicly traded stocks from the same companies. The study included letter stocks traded on the New York and American Stock Exchange as well as the over-the-counter (OTC) markets. The mean discount for lack of marketability of the letter stocks was 25.8 percent.

The study analyzed discounts both by trading market as well as by sales of the company. Of the OTC nonreporting companies, 56 percent had discounts over 30 percent; 34 percent of the companies had discounts over 40 percent. For companies with sales between $1 million and $5 million, 54 percent had discounts over 30 percent; 34 percent of the companies had discounts over 40 percent.

Other Restricted Stock Studies. Several additional studies since the 1971 Institutional Investor Study have measured the DLOM using similar comparisons between restricted securities and their publicly traded counterparts. The results of these studies have generally averaged between 30 and 35 percent. Many of these studies were conducted during the period when securities were restricted for two years. The more important studies and their results are summarized in Exhibit 8.12.

Hall and Polacek. Hall, Lance S., and Polacek, Timothy G., "Strategies for Obtaining the Largest Valuation Discounts," *Estate Planning* (January/February 1994), pp. 38–44.

	Period of Study
Mean Discount of 23 percent	1979–1992

The authors discuss relevant factors for determining the taxable value of an estate. These factors include the criteria outlined by relevant IRS Revenue Rulings as well as the court-allowed discounts for minority interest and lack of marketability. The authors define the purpose for the discounts, evaluate historical trends in court-allowed discounts, and review several methods for determining the appropriate discount for each situation.

The minority interest discount and the lack of marketability discount are separate and distinguishable from each other. The study identifies them as "based upon independent financial principles and analyses."

Exhibit 8.12 Summary of Studies of Restricted Securities Transactions

Study	Period of Study	Discount for Lack of Marketability
Securities Exchange Commission	1966 – 1969	26%
Hall and Polacek	1979 – 1992	23%
Silber	1981 – 1988	33.75%
Stryker and Pittock	1978 – 1982	45%
Maher	1969 – 1973	35%
Gelman	1968 – 1970	33%
Moroney	1969 – 1973[a]	35.6%
Trout	1968 – 1972	33.45%
Arneson	Opinion[b]	50% or greater
Willamette	1981 – 1984	31.2%
Management Planning, Inc.	1980 – 1995	28%
FMV Opinions, Inc.	1980 – 1997	22%
Johnson Study	1991 – 1995	20%
Columbia Financial Advisors Inc.	1996 – 1997	21%
Columbia Financial Advisors Inc.[c]	1997 – 1998	13%

[a] Moroney did not state the exact time period of his study of restricted stocks, but it is within this time frame.
[b] The author used the 35 percent mean discount of the Maher study as a base discount. He then supports a higher discount based upon his analysis of the SEC letter stock study and other SEC studies.
[c] The effect of the SEC Rule 144 change from a two-year waiting period to a one-year waiting period.

Silber. Silber, William L., "Discounts of Restricted Stock: The Impact of Illiquidity on Stock Prices," *Financial Analysts Journal* (July–August 1991), pp. 60–64.

Mean Discount of 33.75 percent	Period of Study
	1981–1988

Silber developed a model that describes the relationship of the discount to restricted securities and the factors that affect the discount.

Using data provided by the Securities Data Corporation, the author analyzed reported transactions of restricted stock sales from 1981 to 1988.

Of the 310 private placements of common stock of public companies, Silber chose 69 transactions that carried no "warrants or special provisions." "For each of these 69 companies, we recorded the date of the private placement, the price per share of the restricted stock and the closing price (or the average of the bid and offer prices) for the company's publicly traded shares on the placement date."

Silber compared the securities based on several characteristics, including the "percentage discount on the restricted stock, dollar size of the offering and number of restricted shares as a percentage of all common stock." He also looked at "the earnings of the firm during the previous fiscal year, total revenues during the previous fiscal year and market capitalization prior to the private placement." Analysis of these transactions showed an average price discount of 33.75 percent. The discounts ranged from 84 percent to a premium (negative discount) in one case of 12.7 percent. Further segregation of the data into discounts less than and greater than 35 percent indicates that "firms with higher revenues, earnings and market capitalizations are associated with lower discounts."

Using the relationships that he found in his analysis, Silber developed a statistical model that described the discount as a function of the:

- Credit-worthiness of the issuing company
- Marketability of the shares
- Cash flow
- Special (value-added) concessions to the investor

Silber defined the measurable "proxies" for each of the factors. Earnings and revenues were used to measure creditworthiness. The amount of restricted shares issued as a percent of total shares outstanding was used to measure marketability. Special provisions such as "guarantees of representation on the company's board" or "a customer relationship between investors and issuer," also were included in the model.

Using the least squares statistical model, Silber defined the relationships among the factors. His results indicate that:

- "The size of the price penalty [discount] varies with firm and issue characteristics."
- The size of the block of restricted securities issued affects the size of the discount more than the amount of revenues of the company.
- As the amount of restricted securities issues increases, those securities become less liquid and the issuer will have to sell them at a greater discount.

Silber concludes: "The results indicated that marketing a large block of illiquid securities requires significant prior concessions, even with firms with substantial creditworthiness. Liquidity clearly has a significant impact on the cost of equity capital."

Stryker and Pittock. Stryker, Charles, and Pittock, William F., "Revenue Ruling 77-287 Revisited," *SRC Quarterly Reports* (Spring 1983), pp. 1–3.

Median Discount of 45 percent	Period of Study
	1978–1982

In the manner of the SEC study on letter stock, Standard Research Consultants analyzed 28 restricted stock purchases that occurred from October 1978 through June 1982. Comparing the value of restricted stocks to public stocks issued by the same company, they found the median discount at which the restricted stocks sold to be 45 percent.

According to the authors:

> To be eligible for inclusion in our study, the private placement had to involve the common stock (or the common stock with purchase warrants) of a United States corporation and had to occur as an arm's-length transaction between unrelated parties which did not affect control of the corporation. In addition, the corporation could not be in a state of bankruptcy; nor could it be a financial, insurance, or real estate company.

Other criteria included the fact that the placement price could not be less than a dollar per share and that adequate information had to exist about the placement and the corporation. The discounts ranged from 7 to 91 percent.

The authors also studied the effect on the discount caused by four determinants of discounts that were outlined in Revenue Ruling 77-287:

1. Earnings
2. Sales
3. Trading market
4. Resale agreement provisions

"Profitability in the fiscal year preceding the placement did not seem to influence the discount; the 11 companies showing a profit in that year had a median discount of 45 percent, while the 17 that were unprofitable had a median discount of 46 percent." However, the earnings patterns of the companies did have an effect on the discounts. "On the average, companies that were profitable in each of the five years prior to the date of placement appeared to sell restricted stock at substantially smaller discounts from market than did those with two, three, or four unprofitable years during the five-year period." Companies that were profitable all five of the prior years had a median discount of 34 percent. Those companies with two to four years of profitability had a median discount of 39 percent, whereas those with zero or one year of profitability had a median discount of 46 percent.

The magnitude of revenues for the companies also affected the discount percentages. Those companies with revenues from approximately $30 million to $275 million had a discount of 36 percent whereas those companies that had revenue in the range of $500,000 to $1.6 million had a discount of 48 percent.

The authors concluded that of the 28 companies studied, there was not a significant difference in the magnitude of the discount based on whether they were traded on a major exchange or not. "The fact that there did not seem to be a relationship between the issuer's trading market and discount might be attributable to the development, since 1969, of the NASDAQ trading system."

In terms of resale agreement or registration provisions including trigger or piggyback rights, the authors indicate that:

> the median discount for the ten placements involving resale agreement provisions was 53 percent, versus a median discount for all twenty-eight placements of 45 percent, a result that appears to be at odds with the implications of RR 77-287. It should be noted that the promulgation of Rule 144 in 1972, plus subsequent relaxations of this Rule, have enhanced the marketability of restricted stock and thus made registration rights less important.

The authors also discuss other considerations:

- The length of time the stock was held by the owner and the various factors under Rule 144.

- The length of time it would take to dispose of the restricted stock since "The longer the time needed to dispose of the restricted stock, the greater the discount, ceteris parabis."
- The financial fundamentals of the issuer such that "The sounder the capitalization of an issuer, the lower the discount tends to be."
- The investor's appraisals of the unrestricted stock being traded in the marketplace: "one would analyze the issuer's relative price: earnings multiples, dividend yields, and ratios of market price to tangible book value as compared with those of comparable companies (rational investors require higher discounts from an issuer whose stock they believe is overpriced)."
- The trading volume and volatility of the unrestricted stock: "The greater the company's trading volume, the greater the likelihood that upon expiration of the resale restrictions, the restricted stock can be sold publicly without disrupting the market for the issuer's unrestricted stock. A purchase of restricted stock assumes less additional risk when the market for the issuer's unrestricted stock is stable."

The authors go on to state that "In addition to being probative of discounts in cases involving non-controlling restricted common stock interests issued in private placements, these factors are equally important in the valuation of non-controlling closely held common stock, qualified option stock . . . and other forms of restricted ownership interest."

Maher. Maher, Michael J., "Discounts for Lack of Marketability for Closely-Held Business Interests," *Taxes* (September 1976), pp. 562–571.

	Period of Study
Mean Discount of 35 percent	1969–1973
Median Discount of 33 percent	1969–1973

The author researched the purchases of restricted securities by investment companies from 1969 to 1973. "The discounts were derived by comparing the cost to the funds to the market value of unrestricted securities of the same class in the same companies on the acquisition date." Maher determined that the mean discount on transactions occurring in this time frame was approximately 35 percent. The range of discounts for the 34 transactions studied was 2.7 to 75.66 percent. Further analysis reveals that 68 percent of the transactions occurred at discounts of 30 percent or more, 35 percent occurred at discounts of 40 percent or higher, and 21 percent occurred at a discount of 50 percent or greater.

Maher acknowledges that the investment companies discounted the purchases to take into account the costs of registering the stocks, but he argues that the applied discounts are considerably higher than the costs that investment companies would incur to register the stock.

Maher justifies the 35 percent discount for lack of marketability by pointing out that investors give up the opportunity to invest in other more marketable instruments and that the investor "would continue to have his investment at the risk of the business until the shares could be offered to the public or another buyer is found."

Gelman. Gelman, Milton, "An Economist-Financial Analyst's Approach to Valuing Stock of a Closely Held Company," *Journal of Taxation* (June 1972), pp. 353–354.

Mean and Median Discount 33 percent	Period of Study
	1968–1970

The author evaluates the purchases of restricted securities by four investment companies from 1968 through 1970. Restricted securities are interests in public corporations that contain covenants limiting the resale of the securities by the investor for periods of up to two years. Investment companies buy the stocks "directly from the company, or, in some instances, from selling stockholders. . . . Since there is a restriction on their transferability, restricted securities are usually purchased at a price substantially below that of the freely-marketable securities of the same class as the company."

Using publicly available financial statements, the author compared the price that the investment companies paid for the restricted securities of a corporation to the market price of publicly traded securities of the same corporation. This study was based on an analysis of publicly traded close-end investment companies that specialized in and reported on restricted securities and letter stocks of public companies. In 1970 the four investment companies "had letter stock investments in the common stocks of 89 public companies." Gelman analyzed these transactions and determined that the mean and median discount of all 89 stock purchases was 33 percent.

It is significant to note that:

- 36 percent of the stocks exhibited discounts greater that 40 percent
- 59 percent of the stocks exhibited discounts greater than 30 percent
- 84 percent of the stocks exhibited discounts greater that 20 percent

Moroney. Moroney, Robert E., "Most Courts Overvalue Closely Held Stocks," *Taxes* (March 1973), pp. 144–156.

	Period of Study
Mean Discount of 35.6 percent,	1969–1973
Median Discount of 33 percent	1969–1973

Public records of the purchases of unregistered securities by investment companies provide a basis for determining the size of the lack of marketability discounts for closely held securities. Because the government restricts the sale of unregistered stocks, they are less marketable than freely traded securities.

Beginning in 1969, the SEC required that registered investment companies make public their internal restricted securities valuation methods and transaction data (SEC Accounting Series Release No. 113, dated October 21, 1969, and Accounting Series Release No. 118, dated December 23, 1970). By the end of 1968, open-end and close-end registered investment companies held over $4.2 billion in

restricted equity securities. A review of the prices at which investment companies purchased 146 unregistered and restricted stocks reveals that the actual discount for these securities was sometimes as great as 90 percent.

Moroney also investigated the published financial statements of the companies and reviewed the valuations prepared by the boards of directors of the firms that were required by law to make good-faith estimates of value. Investment companies' board of directors consider several factors when evaluating the value of their restricted securities holdings for their annual financial statement, including the size of the security block, the size of the issuer, and the issuer's presence in the market.

Of the 146 transactions reviewed, the mean discount based on the original purchase was 35.6 percent. Of further interest is that 64 percent of the transactions occurred at a discount of 30 percent or greater, 40 percent occurred at a discount of 40 percent or greater, and 23 percent occurred at a discount of 50 percent or higher.

Trout. Trout, Robert R., "Estimation of the Discount Associated with the Transfer of Restricted Securities," *Taxes* (June 1977), pp. 381–385.

Mean Discount of 33.45 percent	Period of Study
	1968–1972

To determine the appropriate lack of marketability discount on restricted securities, Trout analyzed 60 historical transactions of investment letter stock purchases by mutual funds in the period from 1968 to 1972. Using multiple regression analysis, he determined the relationship among the factors that influence the size of the discount. These factors are:

- Exchange listing
- Number of shares outstanding
- Percent control, which is the number of shares purchased divided by the shares outstanding
- Size of the purchase
- Value of the purchase

Trout enters actual transaction data for each of the variables and solves for the coefficients of the variables. These coefficients describe the relationship that the variables have to the size of the lack of marketability discount.

- *Exchange Listing.* The exchange listing variable accounts for the fact that stocks traded on larger exchanges are generally more marketable than those that are not, and will have lower discounts. Trout sets the variable to "one if the security is listed on either the New York or the American Stock Exchange, and a value of zero otherwise." Analysis indicates that stocks traded on the above exchanges will have an 8.39 percent lower discount than securities listed on smaller exchanges.
- *Number of Shares Outstanding.* "The number of shares outstanding is a proxy for the marketability of the shares purchased." Securities with a greater number

of shares outstanding will be more marketable and therefore have a lower discount. Analysis indicates that "the discount will be about four percentage points smaller for each additional million shares of common stock of the issue which are outstanding."

- *Percent Control.* The amount of control measures both the premium for the privilege of owning a controlling interest in the securities as well as the discount for disposing of a large block of the security. The percent control has a small negative affect on the discount: "the discount should decline by a little less than 1 percentage point for each additional 1 percent of control involved in the purchase."
- *Size of the Purchase.* The size variable "reflects the reduced discount necessary for a purchase of a small number of shares of a restricted security that could easily be sold." The analysis "indicates that small purchases of stock should have a 12.11 percentage point lower discount than purchases that amount to more than 1 percent of the outstanding shares."
- *Value of the Purchase.* The value of purchase discount reflects "the value the shares purchased would have if they were registered or unrestricted." Analysis indicates that "the discount will increase by 4.75 percentage points for each additional million dollars of stock purchased."

In summary, Trout's model has a moderate ability to account for variations in observed discounts. The analysis indicates that the size of the discount is strongly affected by the discussed factors. The model does not explain all of the variations among observed discounts, because other nontangible factors, such as purchase agreements, the bargaining power of the seller, and the lack of an auction market, affect the discount size.

Arneson. Arneson, George S., "Nonmarketability Discounts Should Exceed Fifty Percent," *Taxes* (January 1981), pp. 25–31.

Discount of 50 percent or Greater

Arneson evaluated studies of purchases of letter stock by investment companies. He referred to studies by Maher and Moroney that indicate the appropriate discount for nonmarketability of an interest in a closely held company should be around 35 percent. Arneson agreed with this rate for restricted securities but pointed out that restricted securities of publicly traded companies are different from interests in closely held businesses. He sees enough dissimilarity between the two securities to argue that the discount rates on closely held securities should be above the 35 percent level.

Arneson's support for higher discounts included such factors as:

- Costs of flotation
- Lack of a preestablished market
- Risk
- Inability to market because of company size and history
- Noncash costs of underwriting
- Timing and length of time necessary to go public

He concludes that the discount for lack of marketability for a closely-held company should be closer to 50 percent or greater.

- *Costs of Flotation.* Arneson evaluated the cost of flotation and determined that the cost should include compensation to underwriters and other expenses. He found that, on average, the compensation to underwriters was 8.41 percent and other expenses were 4.02 percent of gross proceeds (based on 1,599 offerings to the general public through securities dealers). For companies whose size of issue was between $2 million and $5 million, the underwriters' compensation was 8.19 percent and the other expenses were 3.71 percent. It is important to note that other expenses include federal revenue stamps, state taxes, listing fees, printing costs, and legal and accounting fees.

  Arneson goes on to note that in addition to the other expenses, there was other noncash compensation in the form of warrants or options in many situations. He indicates that such compensation has been prevalent among small equity issues. He feels that "many closely-held companies would most likely require such additional consideration, and in appraising the cost to market such securities should be provided for."

  Arneson's information comes from the Securities and Exchange Commission's "Costs of Flotation of Registered Issues, 1971-1972," (December, 1974). He also reviews a related study called "An Empirical Analysis of the Flotation Costs of Corporate Securities," *Journal of Finance* (September 1975) and "Unseasoned Equity Financing," *Journal of Financial and Quantitative Analysis* (June 1975). The extra cost for warrants and options was approximately 12 percent.
- *Preexisting Market.* Using the same studies, Arneson presents evidence concerning the wide difference in compensation paid to underwriters for stocks with no previous market as opposed to stocks that already had established market positions. "On the average this amounted to 3.7 percent but varied with size and listing exchanges." The study also indicated that the discounts were higher for stocks on regional exchanges and OTC compared to the New York Stock Exchange and American Stock Exchange.
- *Risk.* Arneson feels that a thorough analysis of the company and the industry in which it operates is an important element in setting risk. He feels that risk is affected by the size of the company and that risk affects the costs of securities flotation. Although he did not determine a specific factor, he indicated that risk could be assessed on the basis of "an industry's general market conditions, business risk of a particular company and its financial risk, leverage, margins and the like."
- *Ability to Market.* "A serious weakness in utilizing flotational basis to determine nonmarketability is that for very small companies, there is almost no possibility that an underwriting could be carried out and a public market created." Arneson quotes in an article by Gerald A. Sears entitled "Public Offerings for Smaller Companies," published in the *Harvard Business Review* (September-October 1968), in which Sears lists the criteria for a company to market its stock successfully: "The company should have a growth rate higher than its industry to attract investors. Owner-managers accustomed to answering to no one in running their businesses must be able to adjust to operating in a sometimes uncomfortable spotlight of attention. The effect of public disclosure must not be to compromise a company's business."

- *Hidden but Real Costs.* "Another cost for a privately-held company going public is an ongoing one of audits, shareholder reports and relations, S.E.C. and state security reports, transfer agent, shareholder meetings and the like. For a small company, these could represent a sizable additional annual expense."
- *Time and Timing.* "Lettered stock could reasonably expect to become registered and thus freely tradable in two to three years; however, it could take longer for a closely-held company to prepare itself and have its stock marketed." Arneson goes on to talk about the fact that the general condition of the marketplace also could dictate whether a company could go public. Several factors outside a firm will influence its ability to market the equity:
  - General level of business activity
  - Level of interest rates
  - Level of stock prices
  - Availability of funds in the money markets

Willamette Management Associates Study

Median Discount of 31.2 percent	Period of Study
	1981–1984

In a study of 33 transactions involving purchases of restricted securities from 1981 through 1984, Willamette Management compared the prices at which the restricted securities were issued to the prices for comparable publicly traded stocks from the issuing company. It found that the restricted securities sold at a median discount of 31.2 percent.

"The slightly lower average percentage discounts for private placements during this time may be attributable to the somewhat depressed pricing in the public stock market, which in turn reflected the necessary economic conditions prevalent during most of the period of the study."[13]

Management Planning Restricted Stock Studies.[14] An independent business appraisal firm, Management Planning, Inc. (MPI) has compiled an analysis of the discounts on restricted stocks as compared to their publicly traded counterparts that includes data from 1980 through 1995. MPI reviewed all reported private placements in that period, choosing transactions that met the following criteria:

- Restricted stock in the transaction had to have a publicly traded and actively held common stock counterpart in the same company with the same rights as the restricted stock.
- Data on the transaction had to be available.
- Publicly traded common stock counterpart had to sell at a price of at least $2 per share.
- Company selling the stock must be domestic.

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[13] Shannon P. Pratt, Robert F. Reily, and Robert R. Schweihs, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies,* 4th ed. (New York: McGraw-Hill, Inc.), p. 400.

[14] Christopher Z. Mercer, *Quantifying Marketability Discounts* (Peabody Publishing, L.P., 1997), pp. 350–355. (Used with permission.) *Note:* This study has been updated. See Chapter 5 of *Handbook of Advanced Business Valuation,* Robert F. Reilly and Robert P. Schweihs, eds. (New York: McGraw-Hill, Inc., 2000).

- The company selling the stock must not be described in disclosure documents as being in a developmental stage.

According to MPI, the criteria mitigate abnormalities in discount data that may be caused by market inefficiencies for certain inactive stocks or speculative stocks. Over 200 private placements of restricted stock met the criteria. MPI further eliminated any company "that suffered a loss in the fiscal year preceding the private transaction," any company with revenues less than $3 million (a start-up company), and any transactions of stocks with known registration rights. Only 49 of the original group of companies met the criteria. Exhibit 8.13 summarizes the results of the MPI study.

Exhibit 8.13 Management Planning Inc., Restricted Stock Study—Summary of Transaction Data

	Revenues ($MM)	Earnings ($MM)	Market Cap. ($MM)	Indicated Discount %
Mean	47.5	2.1	80.4	27.7
Median	29.8	0.7	43.5	28.8
Minimum	3.2	0.1	3.4	0.0
Maximum	293.0	24.0	686.5	57.6

To test the correlation between certain factors and the restricted stock discount, MPI divided the transactions into four quartiles. Two of the 49 companies were omitted from the quartiles because they were financial companies. The results of MPI's analysis indicated that some factors had a clear correlation to the restricted stock discount while others had some or no correlation to the restricted stock discount.

Factors with a Clear Correlation. A number of factors were reviewed in each quartile to confirm whether they appeared to affect the restricted stock discount:

- Revenues
- Recent earnings
- Market price/share
- Price stability
- Earnings stability

The analysis indicated that revenues and recent earnings had an inverse relationship with the restricted stock discount. Restricted stocks in companies with higher revenues or earnings generally were subject to lower discounts than companies with lower revenues or earnings. Companies whose stock sold at higher prices per share had lower restricted stock discounts. MPI stated that "lower share prices are sometimes associated with more speculative or risky companies." MPI measured price stability "by taking the standard deviation of the stock prices divided by the mean of the stock prices and is based on month-end stock prices for the twelve months prior to the transaction date." The restricted stock discounts are higher for

companies with a history of lower price stability. Earnings stability was measured based on the fiscal year net income data of the 10 years prior to the transaction date. Companies with more stable earnings have lower restricted stock discounts.

Exhibit 8.14 illustrates the result of MPI's analysis of the above factors. In ranking revenues, earnings, market price/share, and earnings stability, the first quartile represents the higher end and the fourth quartile represents the lower end of the range. For price stability, the first quartile represents the lower end and the fourth quartile represents the higher end of the range.

Exhibit 8.14 Management Planning, Inc., Restricted Stock Study—Factors with Clear Correlation to Restricted Stock Discounts[15]

		1st Quartile %	2nd Quartile %	3rd Quartile %	4th Quartile %
Revenues	Median	18.7	22.2	31.5	36.6
	Mean	21.8	23.9	31.9	34.7
Earnings	Median	16.1	30.5	32.7	39.4
	Mean	18.0	30.0	30.1	34.1
Market Price/Share	Median	23.3	22.2	29.5	41.0
	Mean	23.3	24.5	27.3	37.3
Price Stability	Median	34.6	31.6	19.2	19.4
	Mean	34.8	33.3	21.0	22.0
Earnings Stability	Median	14.1	26.2	30.8	44.8
	Mean	16.4	28.8	27.8	39.7

Factors with Some Correlation. The following factors showed some correlation with the restricted stock discounts:

- Market capitalization
- Number of shares in block
- Time to sell according to SEC Rule 144 restrictions (dribble out period, the number of three-month periods)
- Number of weeks trading volume to sell
- Block size/trading volume (percent), 10-year revenue
- 10-year earnings growth and revenue stability

The analysis indicated that these factors generally followed a predictable pattern. Companies with larger market capitalization tended to have lower discounts. Larger blocks of stock tended to have higher discounts. The longer the period required to sell the stock based on the Rule 144 restrictions, the higher the restricted stock discount tended to be. The higher the block size as a percent of annual trading volume, the higher the discount tended to be. Companies with

[15] *Ibid.,* p. 357.

greater revenue and earnings growth and revenue stability tended to have lower discounts.

Exhibit 8.15 illustrates the result of MPI's analysis of the above factors. In ranking market capitalization, block size, weeks to sell, block size/trading volume (percent), revenue and earnings growth, and revenue stability, the first quartile represents the higher end and the fourth quartile represents the lower end of the range. For the SEC Rule 144 three-month period, the first quartile represents the longest period and the fourth quartile represents the shortest.

Exhibit 8.15 Management Planning, Inc., Restricted Stock Study—Factors with Some Correlation to Restricted Stock Discounts[16]

		1st Quartile %	2nd Quartile %	3rd Quartile %	4th Quartile %
Market Capitalization	Median	29.9	25.4	26.9	22.5
	Mean	33.0	26.2	26.0	26.3
Block Size (Shares)	Median	29.9	30.0	27.0	19.6
	Mean	31.8	29.6	26.6	23.2
Three-Month Period to Trade	Median	30.7	29.9	27.9	19.6
	Mean	30.4	30.1	26.6	24.2
# of Weeks Trading Volume to Sell	Median	30.7	30.8	28.4	19.6
	Mean	32.4	29.1	25.6	24.2
Block Size/ Trading	Median	30.7	30.8	28.4	19.6
	Mean	32.4	29.1	25.6	24.2
Revenue Growth	Median	28.2	25.0	28.0	39.4
	Mean	26.2	25.0	29.1	31.7
Earnings Growth	Median	24.3	17.7	35.2	34.2
	Mean	26.2	19.5	33.7	32.6
Revenue Stability	Median	29.1	12.6	34.3	41.0
	Mean	27.4	15.6	34.7	34.4

FMV Opinions Study. FMV Opinions, Inc., reviewed 243 restricted stock transactions from 1980 through April 1997. This study was initially reported in *Valuation Strategies*[17] in 2001 with a follow-up article in *Business Valuation Update*.[18] All transactions were prior to the Rule 144 amendment in 1997 that reduced the holding period from two years to one year. The overall mean (average) discount in the study is 22.1 percent and the median discount is 20.1 percent. The standard deviation of the sample is 16.0 percent. The median discount for exchange-traded securities is 15.3 percent, while the median discount for over-the-counter traded securities is 22.4 percent.

[16] *Ibid.,* p. 359.

[17] Robak and Hall, "Bringing Sanity to Marketability Discounts: A New Data Source," *Valuation Strategies,* Vol. 4, No. 6 (July/August 2001).

[18] Robak, Espen, "FMV Introduces Detailed Restricted Stock Study," *Shannon Pratt's Business Valuation Update,* Vol. 7, No. 11 (November 2001).

The FMV Study also provides an analysis of the 243 transactions by SIC Code. As there are too few transactions per SIC code to be meaningful, the authors grouped the transactions into SIC code ranges. The study concludes that financial descriptors such as size, risk, profitability, and liquidity are the most important determinants of the discount for the lack of marketability, not business type.

Risk had a significant effect on the size of the discounts. The study showed that smaller, less-profitable entities and those with a higher degree of balance sheet risk had the highest discounts. The study also found a correlation between the size of the discount and the stock price. The DLOM increases significantly with decreasing stock prices. Other inferences drawn from the FMV study (including revenue, income, dividend payments, dollar block size, book value, market value, and trading volume) also confirm the relationship between risk and the lack of marketability discount.

Johnson Study. The Johnson study[19] observed 72 transactions during the years 1991 to 1995. The range of the discounts was from a negative 10 percent (a premium) to 60 percent. The study points to an average discount of 20 percent, which is lower than past studies. The author attributes the decline in the size of the discounts to the increased number of investors who entered the market for restricted stocks in this five-year period following the SEC adoption of Rule 144A, which allowed qualified institutional investors to trade unregistered securities without filing registration statements. The holding period for restricted stocks in this study was two years.

The study also considered the effect of such factors as profitability, size, transaction amount, and the holding period on the amount of the discount for lack of marketability. The average DLOM was 16 percent when the company reported positive earnings compared to 23 percent when the company reported a loss. This spread in the average discount remained constant for each year net income was examined. The relationship between the magnitude of the discount and the size of the company is clearly direct. The average discount was 13 percent for companies with sales greater than $200 million compared to 23.5 percent for companies with sales of less than $10 million.

Columbia Financial Advisors, Inc. Columbia Financial Advisors, Inc. (CFAI) performed two studies; one examined only private equity placements over the period January 1, 1996, through April 30, 1997, and the other study examined only private common equity placements over the period January 1, 1997, through December 31, 1998. The second study was notable in that it is the first study to consider DLOM after the 1997 Rule 144 change that reduced the holding period for restricted stocks from two years to one.

In the first study, CFAI analyzed 23 transactions and found an average discount of 21 percent. The discounts ranged from 0.8 to 67.5 percent; the median was 14 percent. The study offers this explanation of the decline in the size of DLOM from the earlier studies:

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[19] Johnson, Bruce, "Restricted Stock Discounts, 1991–95," *Shannon Pratt's Business Valuation Update,* Vol. 5, No. 3 (March 1999), pp. 1–3.

> These discounts are generally lower than the discounts recorded in the earlier studies noted above which generally indicated discounts of approximately 35 percent. The increase in volume of privately placed stock (Rule 144A) in the past several years offers an explanation. As activity in a market increases, more and better information becomes available. In addition, there are now more participants in the market for restricted stocks due to Rule 144A and, therefore, increased liquidity. This would tend to decrease discounts because better information results in less risk and thus a lower required rate of return. The lower discounts in this particular study may also reflect, to some degree, the market's anticipation of the SEC's change in the holding period from two years to one year, although we have no way to verify this. Since June 1995, the SEC proposed amendment to Rule 144 was published for public comment. Therefore, knowledgeable private placement and Rule 144A market participants were most likely aware of the proposed changes.[20]

The average discount for the second study, after the Rule 144 holding period was shortened to one year, was 13 percent. The range of discounts in the second study, which analyzed 15 transactions, was 0 to 30 percent; the median was 9 percent. According to CFAI, "The lower discounts in this study in all probability reflect the market's reaction to the SEC's change in the holding period from two years to one year."

The CFAI study also noted other market evidence to support declining discounts following the Rule 144 holding period change. Tetra Tech, Inc., a publicly traded environmental engineering firm, is active in industry acquisitions and typically uses its restricted stock for acquisitions. The Tetra Tech Form 10-K for the fiscal year ending September 30, 1999, included the following statement in the footnotes to its September 30, 1999, financial statements: "The Company values stock exchanged in acquisitions based on extended restriction periods and economic factors specific to the Company's circumstances. During fiscal 1998 and 1999, stock exchanged in acquisitions was discounted by 15 percent. During fiscal 1997, the discount on stock exchanged in acquisitions ranged from 16 to 28 percent."

The CFAI study concluded that while discounts for restricted stocks are declining, "the studies conducted after 1990 are not relevant for purposes of determining discounts for lack of marketability for privately held stock, because they reflect the increased liquidity in the market for restricted securities. Such increased liquidity is not present in privately held securities."

Overall Observations of Studies

The following list presents some interesting observations after reviewing these empirical studies:

- The smaller the company (revenues, earnings, market capitalization), the larger was the discount for lack of marketability.
- Issuers of restricted stock may be better credit risks.

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[20] Aschwald, Kathryn F., "Restricted Stock Discounts Decline as Result of 1-Year Holding Period—Studies After 1990 'No Longer Relevant' for Lack of Marketability Discounts," *Shannon Pratt's Business Valuation Update,* Vol. 6, No. 5 (May 2000), pp. 1–5.

- Issuers of restricted stock are publicly traded companies that have an active market for their stock. Owners of stock in a closely held business have no access to an active market for their stock. Closely held businesses are unlikely to ever be publicly traded.
- Many publicly traded companies reflect annual dividends and/or an established record of capital appreciation in their share price. Many closely held businesses cannot offer this.
- Purchasers of restricted stock are institutional investors whose investment goals and criteria are far different from those of the individual purchaser of a closely held business interest.
- Institutional investors have different levels of risk perception and risk tolerance from purchasers of closely held business stock.
- Purchasers of restricted securities usually intend to market the purchased securities in the future and assume a ready market will exist at that time. Purchasers of stock in closely held companies have little or no expectation to market the stock in the future; if they expect to market the stock, they assume a limited market will exist for them to do so.
- Investments of venture capital companies in OTC nonreporting companies most closely resemble purchases by closely held business owners.
- Venture capital investments are generally of relatively short duration, suggesting even higher discounts for the typically longer positions in closely held business stock.
- When an analyst applies a discount to a closely held company interest that is equal to the discount observed in restricted stock of a publicly traded company, the implication is that the restricted stock is comparable to the closely held stock.
- Blind reliance on empirical studies or discounts allowed by the courts is oversimplistic as each valuation has its own unique facts and circumstances that must be reflected in the selection of discounts.
- Valuation analysts who rely solely on empirical studies without analysis may understate discounts and overstate value.
- Valuation analysts often fail to support discounts with sound reasoning and considered analysis.
- In the valuation of stock in most closely held businesses, the average discounts observed in the restricted stock studies may be considered the *minimum* discount applicable in many situations.

QUANTITATIVE TOOLS

Investor's Discounted Cash Flow Models

John C. Harper, Jr., and J. Peter Lindquist wrote one of the early articles on the use of a "shareholders'" DCF model. In their article they present a straightforward example[21]:

[21] John C. Harper, Jr., and J. Peter Lindquist, "Quantitative Support for Large Minority Discounts in Closely Held Corporations," *The Appraisal Journal* (April 1983).

> Let us demonstrate by a simple but realistic example of how this discount is calculated and the impact it can have on today's value of a share of stock. A friend of John Smith's is approaching retirement and has offered to sell Smith his 10 percent common stock interest in Acme Services, Inc., which is controlled by members of the William Jones family. What can Smith afford to pay for this stock?
>
> *Today's value:* Smith analyzes the performance of the company using the Revenue Ruling 59-60 guidelines, then discusses his opinions with Bill Jones, current president of the company. They agree that $100 per share is a fair value if 100 percent of the stock were to be sold today.

The article also presents that the company will grow 10 percent per year for the next 10 years at which time Jones is to retire and "may" sell the company. Smith used a 25 percent annual return on investment given the risks of a private company investment.

If the sale of the company is expected to be in the tenth year, then a buyer should not pay any more than $28, or a 72 percent discount from the original $100. The expected or anticipated year of sale can be most difficult to determine as the controlling shareholder's age, health, mental well-being, and "exit strategy" all affect the decisions to sell.

This example shows that a minority interest with very little market is near worthless. Furthermore, the discount that we see in this example may be *a combined discount of both lack of control and lack of marketability* because the $100 per share price is an "enterprise" or controlling value, and the present value in the tenth year of $28 may represent "cash equivalent" or marketable minority interest value, thus including both discounts.

Quantitative Marketability Discount Model

In 1997 Z. Christopher Mercer published a book entitled *Quantifying Marketability Discounts* that expanded on the concepts presented in the Harper/Lindquist article. Mercer's book presents a model for analyzing marketability discounts and includes excellent overviews of restricted stock studies, IPO studies, and Tax Court cases.

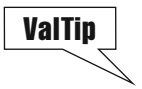
The quantitative marketability discount model (QMDM) model requires five key inputs:

- Marketable minority value of the stock
- Expected growth rate of a marketable minority shareholder interest
- Expected holding period
- Required rate of return for a nonmarketable minority interest
- Expected dividend payments

Some analysts have observed that the discount derived in this approach may appear to combine discounts both for lack of control and marketability. Mercer, however, disagrees. In *Business Valuation, Discounts and Premiums*, he states:

> A number of appraisers have suggested that the QMDM may be capturing elements of the minority interest discount as well as the marketabil-

ity discount. There has been a recent exchange on this issue in *Shannon Pratt's Business Valuation Update* in vol. 7, no. 3 (March 2001) pp. 7-10 and vol. 7, no. 5 (May 2001) pp. 9-10. Assuming, as I do, that it is appropriate for appraisers to make normalizing adjustments in the development of marketable minority valuation indications, the QMDM captures the appropriate marketability discount. The rationale for my position on normalizing adjustments is outlined in Dr. Pratt's book, *Cost of Capital—Estimation and Applications,* in Appendix D which he asked me to write relating to the use of ValuSource PRO Software. Some appraisers assume that such normalizing adjustments for discretionary owner compensation and expenses are inappropriate in minority interest appraisals because they reflect elements of control not available to minority shareholders. They further assume that the diminution of value resulting from the "leakage" of discretionary cash flows reflects elements of a *minority interest discount*. Under these assumptions, which I do not believe to be correct, the QMDM captures elements of the minority interest discount.[22]



The QMDM represents continued theoretical development of the concept of the marketability discount. Some appraisers have adopted some form of the framework for analyzing discounts that Mercer has presented but most agree that if used, it should be in conjunction with the use of traditional discount studies.

Option Pricing Models

In 1993 David B. Chaffe III published an article about his theory that the Black-Scholes pricing model could be used to determine the amount of a marketability discount.[23] Mr. Chaffe uncovered relationships in the comparison of his computation of the marketability discount with that of the transaction data. He found that the European option, which is exercisable only at the end of the option period, could be an appropriate model for the SEC Rule 144 holding period of restricted shares. Substituting certain inputs of the model to express conditions of a restricted stock, he was able to produce results similar to those of the restricted stock studies. His analysis was presented in *Business Valuation Review*, December 1993, "Option Pricing as a Proxy for Discount for Lack of Marketability in Private Company Valuations."

[22] Pratt, Shannon P., *Business Valuation Discounts and Premiums* (New York: John Wiley & Sons, Inc., 2001), p. 184.
[23] David B. Chaffe III, "Option Pricing as a Proxy for Discount for Lack of Marketability in Private Company Valuations," *Business Valuation Review* (December 1993).

Measuring the Amount of Discount for Lack of Marketability

Each method of determining a DLOM has its strengths and weaknesses. Determining the amount of the marketability discount to be applied to closely held securities by reference to either the restricted stock or IPO studies requires careful scrutiny of the studies themselves. Recently these studies have been challenged as to their applicability to marketability discounts for closely held securities by both the courts and other experts. The DCF models, particularly the QMDM, have not yet gained acceptance in the courts. Accordingly, the reader must understand these particular criticisms before adopting any of these methodologies for determining a discount for lack of marketability.

Factors Influencing Marketability of the Investment

In the landmark Mandelbaum case (see end of chapter for case summary), a number of factors were considered by the court in their analysis of the magnitude of the marketability of the Company. These factors, which are explained in the case summary, included:

- Financial statement analysis
- Dividend policy
- History and nature of the company
- Management
- Control
- Stock restrictions
- Holding period
- Redemption policy
- Costs of IPO

This was the sole issue at trial. Below is a listing of other factors that may influence marketability and liquidity depending upon the individual circumstances of the engagement. Some of these factors may overlap with issues related to lack of control or may be incorporated in the price multiple or discount rate.

- Accessibility and reliability of financial information
  - Compiled statements are less reliable than audit or review statements.
  - Manual internal accounting systems are generally less reliable and less accessible.
- Number of shareholders
  - Companies with many shareholders may be more likely to enter into a transaction to satisfy diverse owner interests.
- Concentration of control owners
  - Control owners may dominate businesses and operate them to meet their own ends with little consideration for the needs of minority owners.
- Number of potential buyers
  - A large number of interested purchasers may improve the possibility of a transaction.
- Access to capital marketplace
  - Low leverage businesses may be more appealing to prospective purchasers.

- Size of the business
  - Larger businesses may be more easily sold or financed and possess broader appeal than smaller businesses.
- Volume of comparable private transactions
  - Businesses in an industry that is experiencing high merger and acquisition activity may be more marketable.
- Owners with adversarial relationships or an inconsistent business philosophy
  - Owners who are unable to agree may make the business less marketable.
- Desirability of the business
  - Businesses in "hot" industries may be more marketable because they tend to attract interest.
- Existence of restricted stock agreements
  - Shareholder agreements may prevent free transferability and limit marketability of stock.
- Existence of noncompete agreements
  - Businesses that fail to limit the mobility of critical personnel may be less marketable.
- Yield
  - Businesses with a track record of consistent high profitability are usually more easily transferable.
- Liquidity of control owners
  - The existence of other liquid assets on the part of the owners may reduce the desire or need to transfer the business.
- Quality and competence of management team
  - Businesses with competent, experienced management may be more appealing to a broader range of potential purchasers.
- Existence and effect of pending litigation
  - Businesses with potentially costly legal issues (i.e., environmental) are not as desirable in the marketplace.
- Size of block of stock
  - Owners of large blocks may have influence on corporate governance.
- Existence and extent of contractual restrictions
  - Financing agreements may limit compensation of control owners or the ability to declare and pay dividends.
- Degree and effect of industry regulations
  - Industry regulation can restrict the control owner where minority shareholders might otherwise be helpless.
- Effects of state law
  - Percentage control required to undertake major corporate actions (i.e. sale of assets) can be more favorable in some states.
- Existence of swing vote attributes
  - Swing votes can lessen the discount.
- Relationship between controlling and noncontrolling shareholders
  - Harmonious relationships may reduce discounts, whereas adversarial relationships may increase discounts.
  - Existence of shareholder agreements that grant control to certain shareholders for certain activities (if transferable).

When valuing a closely held company, care, reasonableness, and sound professional judgment must be employed when applying discounts. Furthermore, the particular facts and circumstances of each valuation must be the final determinate of discounts. A thorough understanding of both the subject company and the underlying data used in the discount studies are important for defensible valuation conclusions. The marketability factors as presented should not be considered exhaustive nor are they applicable in each valuation. Any particular closely held company may have a unique discount issue that must be taken into consideration.

Exhibit 8.16 is a summary example of a possible DLOM chart, here using 35 percent, the general average of several restricted stock studies, as the starting point. This is for presentation purposes only.

Exhibit 8.16 DLOM Adjustment Example

	Impact on Marketability Discount		
Marketability Adjustment Factors	**Warrants An *Above Average* Discount**	**Warrants An *Average* Discount**	**Warrants A *Below Average* Discount**
Starting Point	**35%**	**35%**	**35%**
History and Outlook	+		–
Financial Factors	+		–
Management	+		–
Holding Period	+		–
Redemption Policy	+		–
Transfer of Control	+		–
Restrictions on Transfer	+	No Change	–
Cash Distribution Policy	+		–
Information Access and Reliability	+		–
Cost of Public Offering	+		–
Other Factor 1	+		–
Other Factor 2	+		–
Other Factor 3, etc.	+		–
Ending Point	**> 35%**	**35%**	**< 35%**

OTHER DISCOUNTS

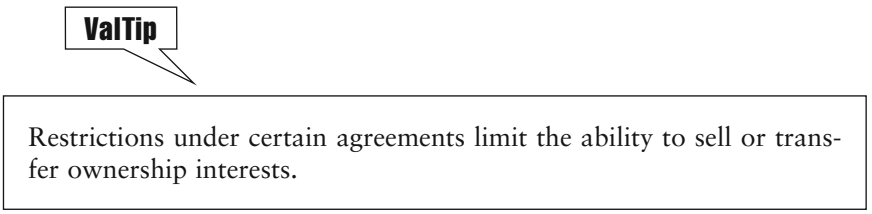
ValTip

In addition to the discounts for lack of control and marketability, there are several other potential discounts. Some analysts consider these discounts in the calculation of a discount or capitalization factor while others separately quantify and apply the discounts.

While discounts for lack of control and lack of marketability apply to the vast majority of valuations, the following discounts are taken less frequently as a separately quantified and displayed discount.

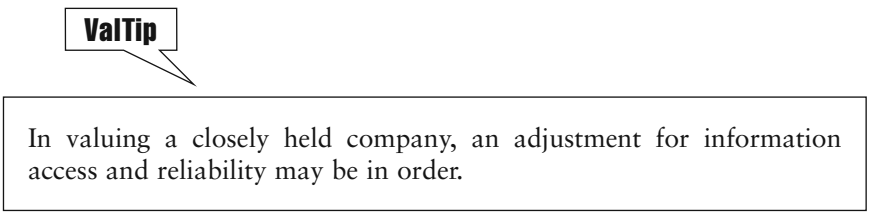
Restrictive Agreement Discounts

A review of any buy-sell and/or restrictive agreement within a closely held corporation typically reveals various stockholder rights, including income and dividend preferences, liquidation preferences, voting rights, and limitations of the sale of stock. It also may include an actual stock price or a protocol or method for determining the price.



In some instances, the sale price is dictated. The effect of these agreements is the difference in price between an unrestricted ownership interest and the restricted interest giving rise to a shareholder level discount. The more severe the restrictions, the higher the discount. The Tax Courts have periodically suggested that restrictive agreements be considered but that they may not necessarily set value. Usually restrictive agreements are of greater importance in an estate tax valuation than a gift tax valuation.

Information Access and Reliability Discount



Smaller companies, free of SEC regulations and the restrictions associated with public oversight, can produce scanty and unreliable financial information. An investor considering an investment in such a company would discount any information believed to be suspect or unreliable. If a company being valued is being compared to publicly traded companies, adjustments to the financial statements or valuation multiples (e.g., depreciation, leverage, taxes, nonrecurring items, and nonoperating assets) may be necessary.

If there is additional risk associated with uncertainty in the underlying data, it may be appropriate to apply a discount. The magnitude of such a discount would

depend entirely on the facts and circumstances of each individual situation. Furthermore, if the proper financial adjustments are made, a discount may not be appropriate.

Liquidation Costs Discount

An ongoing disagreement between the IRS and many tax practitioners revolves around the treatment of the costs related to liquidating the assets in the estate.

Certain costs, such as brokers' fees, state and local transfer taxes, and holding period interest, would be incurred to realize the property's fair market value. It has therefore been argued that these costs should be used to reduce the value of the property in the estate; some analysts take a discount.

Trapped Capital Gains Discount

At the very least, a trapped capital gains discount should be considered if liquidation is imminent and the entity holds assets with unrealized appreciation. The IRS outlined its position in TAM 9150001.[24] In general, the TAM stated that if the immediate liquidation of the subject assets is not contemplated, the capital gains tax cannot be used to reduce the value of the estate. Obviously, many tax practitioners disagree with this assumption. Furthermore the courts have accepted these discounts in several recent cases including *Estate of Artemus Davis,*[25] *Eisenberg v. Commissioner,*[26] and *Dunn v. Commissioner.*[27]

Key Person/Thin Management Discount

Key person and thin management discounts are based on the premise that the contribution of an individual (or small group of individuals) to a business is so significant that it is almost certain that present and future earnings levels would be adversely affected by their loss. This is not an unusual situation in many smaller closely held companies. Revenue Ruling 59-60 deals with this issue by stating: "The loss of the manager of a so-called one-man business may have a depressing effect upon the value of the stock of such business, particularly if there is a lack of trained personnel capable of succeeding to the management of the enterprise." The selection

[24] IRS TAM 9150001 (August 20, 1991).
[25] *Estate of Davis v. Comm.,* 110 T.C. 530 (1998).
[26] *Estate of Eisenberg v. Comm.,* 155 F.3d 50 (2d Cir. 1998).
[27] *Estate of Dunn v. Comm.,* U.S. Court of Appeals, 5th Cir., No. 00-60614, August 1, 2002.

of a discount to reflect the loss of a key manager or a thin management structure may be tempered by the effects of life insurance policies that are in existence as of the date of the valuation.

ValTip

A key person or thin management entity-level discount would be appropriate in the valuation of a closely held company where an owner or employee is responsible for generating a significant portion of the business's sales or profits. This key person may be a revenue generator, possess technical knowledge, or have close relationships with suppliers, customers, or banks.

Investment Company Discount

It is not unusual for investment companies to sell on the basis of their assets (typically real estate and securities) rather than their earnings. Revenue Ruling 59-60 states "the value of the stock of a closely held investment in a real estate holding company, whether or not family owned, is closely related to the value of the assets underlying the stock. For companies of this type, the appraiser should determine the fair market values of the assets of the company."

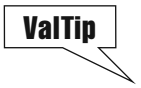
An analysis of publicly traded investment real estate companies and publicly traded closed-end funds reveals that minority interests in investment companies typically sell at a discount from their respective pro rata share of the firm's net assets restated at fair market value. The application of this entity-level discount would adjust for the shareholders' indirect ownership of these assets and their inability to force the sale, liquidation, or merger of these assets. Investment company discounts range anywhere from 10 to 60 percent, depending on the facts and circumstances of each case.

At first glance, the investment company discount in its purest form may be considered a minority interest discount; however, an investment company discount adjustment has been recognized by the courts for application to a majority interest. In *Estate of Folks,*[28] the court recognized that different investment company discounts might apply to different ownership percentages for the same company. The court opined that a 50 percent discount was allowable for a minority interest and a 40 percent discount was allowable for a majority interest (less than control). Note that the court also allowed an additional marketability discount for the minority interest.

In *Estate of Dougherty,*[29] the court decided that a 35 percent discount was allowable for nonmarketability and operating and liquidation costs. The decedent held a 100 percent beneficial interest in a trust that owned a 100 percent interest in a company that owned primarily real estate and other nonliquid assets.

[28] *Estate of T. John Folks, Jr.,* T.C. Memo 1982-43.
[29] *Estate of Albert L. Dougherty,* T.C. Memo 1990-274.

Blockage Discounts and Market Absorption



Blockage discounts are based on the theory that, ordinarily, a large block of publicly traded stock cannot be sold as readily as a few shares of stock.

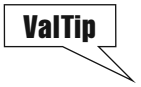
Where there is only a limited market for the shares, offering a large block can have a depressing consequence on the value of the shares of stock.

Treasury Regulation Section 20.2031–2 states the following:

> The size of the block of stock to be valued in relation to the number of shares changing hands in sales may be relevant in determining whether selling prices reflect the fair market value of the block to be valued. If the block of stock is so large in relation to the actual sales on the existing market that it could not be liquidated in a reasonable time without depressing the market, the price at which the block could be sold as such outside the usual market, as through an underwriter, may be a more accurate indication of value than market quotations.

The following factors, among others, should be considered in determining the blockage discount to be applied to blocks of public stocks:

- Size of the block in relation to the total shares outstanding
- Size of the block in relation to the daily trading volume
- Volatility of the stock
- General, economic, and industry trends
- Alternatives for disposing the stock
- Length of time necessary to dispose of the stock without affecting the current price



Blockage or market absorption discounts also can be considered when valuing other assets, such as real estate. In the valuation of a closely held real estate investment holding company, a discount for potential market absorption should be considered.

For example, a large block of similar real estate holdings within a single geographical area may create oversupply and may be more difficult to sell over a reasonable period of time than one property. Where there is a limited market for a

certain type of property, offering a large block of properties could depress the market and lower the prices that otherwise could have been obtained. It is simply a matter of supply and demand.

The following factors, among others, are considered when valuing a large block of real estate placed on the market on any given day:

- Number of properties and square footage of properties that are being valued
- Geographical concentration
- Type of property (e.g., apartments, office buildings, etc.)
- Total supply of that type of property within the same geographical area
- Length of time to dispose of the real estate without affecting the price
- Whether the market is stagnate or appreciating
- Market and real estate trends

Nonhomogeneous Assets Discount

A nonhomogeneous assets discount is applicable to an unusually diverse collection of assets or businesses within the subject company being valued. A small company with limited access to capital and a small management team may have difficulty managing such a broad spectrum of assets. The discount will measure underutilization of assets or lack of synergy among assets.

Lack-of-Diversification Discount

A lack-of-diversification discount may be applicable to a niche company. This discount may be used in addition to a small-company discount. Lack of diversification typically is associated with a one-product company or with material sales dependent on a fad.

The lack-of-diversification discount is a measure of the risk associated with the niche disappearing and the costs associated with developing a new product segment or possibly liquidation. A thorough understanding of the business costs relative to its industry is required to quantify a lack-of-diversification discount. Care should be taken with any other approach to value that may already incorporate this discount. For example, this discount could be included implicitly in a capitalization rate or a market multiple.

Although these discounts are most likely included in either the discount rate or market multiple, it may be necessary to make an additional adjustment for a small-company risk discount and a company-specific risk discount.

Small-Company Risk Discount

The degree of comparability between the closely held subject company and its publicly traded counterparts must be evaluated.

Merger, acquisition, and financial data are available that indicate that the prices paid for smaller, closely held companies can be lower than the prices paid for their larger, publicly traded counterparts. Furthermore, studies indicate that rates of return required for investing in small companies can be higher than the rates of return required on much larger, publicly traded, diversified companies. This is important since the higher the rate of return required, the lower the final value. This adjustment is usually made in the discount or cap rate. (See Chapter 5.)

ValTip

When a smaller closely held company is being compared to a larger publicly traded company, an adjustment for size may be appropriate.

A small-company risk discount may be separate from a marketability discount and a minority discount. Depending on how the discount was determined, this adjustment may incorporate the differences in information access and reliability and lack of adequate succession management.

ValTip

Small companies often have a limited access to capital, limited ability to weather a market downturn, limited resources to develop and market new products, and so on. Smaller companies also can have a higher cost of capital than larger companies.

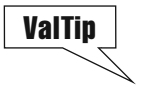
The data from some of these studies are calculated primarily from control valuation multiples from acquisitions of companies. Therefore, a minority discount would be applied if a minority value were desired. A discount for a key person or thin management may not be applicable because the prices paid for the closely held companies used in the study may have already been reduced to reflect this situation, although this would not be the case in every company. Lack of marketability and information access discounts must be carefully considered since prices paid for the companies that make up the studies were probably set and/or adjusted based on some level of due diligence and perception of marketability on the part of the buyer.

Company-Specific Risk Discount

The risk premium for unsystematic risk attributable to the specific company being valued should account for additional risk factors specific to the company that may not be reflected in the comparable companies. This adjustment is usually made in the discount or cap rate. (See Chapter 5.)

Firm-specific risk factors may include:

- Litigation
- Reliance on a few customers
- Limited supply of sources
- Old technology
- Riskier business



Care should be exercised to avoid overlaps or "double discounting" with thin management discounts, small-company risk discounts, lack-of-diversification discounts, or others.

DISCOUNTS AND PREMIUMS SUMMARY

When valuing a closely held company, care, reasonableness, and sound valuation judgment must be employed when applying discounts. The particular facts and circumstances of each valuation must be considered for the final determination of discounts. Experts must understand and properly apply the results of the various studies that they relied on and applied to the subject company. The blind application of discounts, without a thorough understanding of the subject company as compared to the underlying data used for the discounts, can lead to misleading valuation results. For additional information on discounts and premiums see B*usiness Valuation Discounts and Premiums* by Shannon P. Pratt (New York: John Wiley & Sons, Inc., 2001).

ADDENDUM—TAX COURT CASES (THE OLDIES BUT GOODIES)

There are a number of significant cases that have dealt with the issues related to discounts applicable to closely held companies. The following case outlines were selected due to their extensive presentation of these issues. See Chapter 13 for additional and more recent cases. Please note that some of the experts' testimony discussed here may have been affected by poor direction, ineffective legal trial strategy, or other factors beyond their control.

Bernard Mandelbaum et al. v. Comm.

Date of Opinion:	June 12, 1995
Dates of Valuation:	December 31, 1986, December 16, 1987, December 23, 1988, December 15,1989, February 1, 1990, and December 30, 1990
Type of Business:	Women's Apparel Retail Stores
Name of Company:	Big M
Property Valued:	Gifts of minority common stock
IRS Value:	30 percent DLOM for all valuation dates
Taxpayer Value:	75 percent DLOM for December 31, 1986; 75 percent for December 16, 1987; 75 percent for December 23, 1988; 75 percent for December 15, 1989; 70 percent for February 1, 1990; and 70 percent for December 30, 1990
Court's Opinion:	30 percent DLOM for all valuation dates
Main Areas of Dispute:	Magnitude of the discount for lack of marketability

Cite

T.C. Memo. 1995-255.

Background

This is a gift tax case with valuation dates of December 31, 1986, December 16, 1987, December 23, 1988, December 15, 1989, February 1, 1990, and December 30, 1990. The Mandelbaum family was the sole shareholder. The company, Big M, was a privately held S corporation for all the gift dates except in 1986, when it was a C corporation. The company operates women's apparel retail stores in New York, New Jersey, Pennsylvania, Delaware, Maryland, and Virginia. Big M had been in business since 1950. It operated 105 stores in 1986 and 122 in 1990. The company had total revenue of $145 million in 1986 and $261 million in 1989.

Both the taxpayer (Petitioner) and the IRS (Respondent) stipulated to the freely traded or minority marketable values of the stock. Both sides also agreed that a discount for lack of marketability was appropriate. The sole remaining dispute was over the magnitude of the discount.

	Taxpayer			
	Range	Selected	IRS	Court
1986	66%–94%	75%	30%	30%
1987	63%–93%	75%	30%	30%
1988	69%–95%	75%	30%	30%
1989	73%–96%	75%	30%	30%
1990	68%–83%	70%	30%	30%
1990	64%–78%	70%	30%	30%

Taxpayer's Position

The Taxpayer retained experts from Price Waterhouse, who relied upon seven restricted stock studies (35 percent) and three IPO studies (45 percent).

IRS Position

The IRS retained experts from BDO Seidman who relied on three restricted stock studies with average discounts of 30 to 40 percent.

Court's Opinion

The court determined its own discount for lack of marketability. However, the court also accepted the studies presented by both sides as the starting point for a discount. The court considered nine factors:

1. *Financial statement analysis*
   - Type of financial statement opinion (audit opinion)
   - Soundness of company's capitalization (strong capitalization)
   - Ratio of the company's assets to liabilities (solid asset-to-liability ratio)
   - Company's net worth and future earning power (substantial net worth, revenue and earnings)
   - Quality of the company's revenue and earnings (strong cash position)
   - Company's goodwill (recognized name)

Court's opinion: *Below-average marketability discount*

2. *Company's dividend policy*
   - Big M's low dividend payout ratio was not a factor since the company had strong earnings and sufficient cash. The company could be more attractive as a growth stock as opposed to an income stock.

Court's opinion: *Below-average marketability discount*

3. *Nature of company, its history, its position in the industry, and its economic outlook*
   - Big M was not the leader in the industry.
   - Big M had diversified operations and was very profitable.
   - The company had a bright future.

Court's opinion: *Below-average marketability discount*

4. *Company's management*
   - Strong management team that was proven, experienced, and well known in industry. It tended to act in the best interest of the company, as opposed to its own interests.

Court's opinion: *Below-average marketability discount*

5. *Amount of control in transferred shares*
   - The court distinguished between minority and marketability discounts.
   - None of the gifts represented control.

Court's opinion: *Average marketability discount*

6. *Restrictions on transferability of stock*
   - Buy/sell language within a shareholder agreement was agreed to be enforceable and legal.
   - Since there was no formula or price in the agreement for the stock value, the court did not feel it was a major factor.
   - Restrictions (right of first refusal) were not severe enough to warrant a large discount.
   - The court felt it would not limit the number of buyers but would only govern the order in which buyers must stand in line to buy the stock.

Court's opinion: *Above-average to average marketability discount*

7. *Holding period for the stock*
   - The length of time to hold the stock was considered.
   - The court agreed that market risk tends to increase the longer the holding period, thus decreasing marketability.
   - The taxpayer's expert assumed a holding period of 10 to 20 years.
   - The IRS expert assumed a holding period of two years.
   - The court rejected both assumptions.

Court's opinion: *Neutral marketability discount*

8. *Company's redemption policy*
   - The court focused on a single stock redemption 12 to 16 years prior to valuation dates.
   - It felt an investor would look favorably on this.

Court's opinion: *Below-average marketability discount*

9. *Costs associated with making a public offering*
   - The court felt that the discount would be affected by whether the buyer would bear the costs of registering the stock.

Court's opinion: *Above-average to average marketability discount*

These nine factors are presented as an example of using elements that contribute to or detract from marketability to arrive at a discount amount. While the

concept is solid, the selection of factors can be an issue. It is important to select factors that are not already considered in the underlying valuation analysis so as to avoid "double counting." For example, factors such as the quality of the financial statement analysis, the nature of the company, and the quality of management may already be included in the calculation of the discount rate applied to the company's cash flow.

It may be better not to "score" or assign specific values to the factors that affect marketability. Most experts generally state that this factor or that factor will warrant an above- or below-average marketability discount.

Jane O. Kosman v. Comm.

Date of Opinion:	March 11, 1996
Date of Valuation:	September 30, 1986 and March 31, 1987
Type of Business:	Banking
Name of Company:	Kosman, Inc. (Scottsbluff National Bank and Western National Bank)
Property Valued:	Value of shares (52 percent) of common stock
IRS Value:	
September 30, 1986	Voting stock $294/share; nonvoting stock $282/share
March 31, 1987	Voting stock $294/share; nonvoting stock $282/share
Taxpayer Value:	
September 30, 1986	Voting stock $116.24/share; nonvoting stock $100.74/share
March 31, 1987	Voting stock $131.76/share; nonvoting stock $114.19/share
Court's Opinion:	
September 30, 1986	Voting stock $164.85/share; nonvoting stock $156.06/share
March 31, 1987	Voting stock $185.58/share; nonvoting stock $175.69/share
Main Areas of Dispute:	Discounts including minority interest, lack of marketability, and nonvoting stock. Proper use of comparable companies when using the market approach. Multitiered or layered discounts.

Cite

T.C. Memo. 1996-112.

Background

This is a gift tax case at two dates, September 30, 1986, and March 31, 1987. The gifts were minority blocks of stock. The gifts of voting stock were approximately 34 percent and 4 percent of the outstanding shares in 1986 and approximately 7 percent in 1987. The gifts of nonvoting stock were approximately 26 and 21 percent in 1986. Kosman, Inc., was the holding company that owned a 32 percent interest in Scottsbluff National Corp., which owned 100 percent of Scottsbluff National Bank (SNB), and a 10 percent interest in Western National Bank (WNB). Both sides retained experts. Grant Thornton valued the stock for the taxpayer. Three experts prepared a joint report for the IRS.

Taxpayer's Position

- Relied on prior transactions that approximated book value.
- Looked at publicly traded bank holding companies that had operations in Nebraska. Rejected most of them due to size, geographical diversity, and loan portfolio.
- Applied a 10 percent discount for minority interest, 25 percent for lack of marketability, and 10 percent for lack of voting power at the holding company level.

IRS Position

- Used a discounted cash flow approach with a 14 percent discount rate for SNB and 15 percent for WNB.
- Projected after-tax earnings over five years. Basis for discount rate was Standard & Poor's 500 small capitalized companies.
- Used the public company market approach at 1.25 times book value for SNB.
- Relied on out-of-state banks for comparables.
- Applied a 15 percent minority discount and 10 percent lack-of-marketability discount to the value of SNB.
- Applied a 20 percent minority discount and 15 percent lack-of-marketability discount to the value of WNB.
- Applied a 10 percent discount for minority interest, 10 percent for lack of marketability, and 4 percent for lack of voting power at the holding company level.

Court's Opinion

- "Respondent's experts estimated that shares of First National of Nebraska stock traded at 86 percent of its book value per share on December 31, 1986. They noted that First National of Nebraska was larger, more diversified, more profitable, and had better income growth than Scottsbluff National Corp. They said that the market would value Scottsbluff National Corp. at a lower percentage of book value per share than First National of Nebraska. Despite that conclusion, respondent's experts estimated, using the market method that Scottsbluff National Corp. stock would sell at 125 percent of book value per share. They did not explain this inconsistency."
- The court addressed the use of out-of-state comparables: "Respondent's experts did not adequately address whether economic conditions in those bank markets and in northwestern Nebraska were similar."
- The court felt that respondent's experts' use of a 14 percent discount rate for SNB did not recognize the economic outlook for SNB.
- The court did not rely on prior sales of stock because "With one exception, the sales on which respondent relies involved former employees, directors, or their families. The shareholders received higher prices for their shares because of their association with the corporation."
- The court put more weight on respondent's experts' use of the discounted cash flow method than their capitalization of earnings method.
- Each side relied on various studies to determine discounts.
- Applied 10 percent discount for minority interest, 15 percent for lack of marketability and 4 percent for lack of voting power at the holding company level.

The discounts were added together and then applied versus applying each one sequentially.

Estate of Joseph R. Cloutier v. Comm.

Date of Opinion:	February 16, 1996
Date of Valuation:	June 11, 1990
Type of Business:	Television Stations
Name of Company:	Corporation for General Trade (CGT)
Property Valued:	Value of 100 percent of common stock
IRS Value:	0 discount
Taxpayer Value:	25 percent discount
Court's Opinion:	0 discount
Main Areas of Dispute:	Does a discount for lack of marketability apply to the valuation of a 100 percent control interest?

Cite

T.C. Memo. 1996-49.

Background

Decedent owned 100 percent of CGT, which owned WKJG-TV, the NBC affiliate in Ft. Wayne, Indiana. Prior to trial both sides agreed that the control interest value was $12,250,000. The issue was whether this was a marketable or nonmarketable value and if there should be a discount for lack of marketability.

Taxpayer's Position

- Retained a CPA firm to determine the discount for lack of marketability of 25 percent to be applied against a 100 percent controlling interest.
- CPA relied on the factors outlined in the *Mandelbaum* case as well as various marketability studies.
- Opined that a control premium was not applicable because the starting point was control value.
- CPA gave an oral review report under the Uniform Standards of Professional Appraisal Practice (USPAP). CPA was questioned about this at trial.

IRS Position

- No discount should be applied since the marketability of the company was included in the approaches to value used by the various experts.

Court's Opinion

- No discount applies since underlying value was not derived from publicly traded stocks.
- *Mandelbaum* does not apply since *Mandelbaum* had a different set of facts and circumstances and was for the valuation of a minority interest, not a control interest.
- The same judge presided in both *Cloutier* and *Mandelbaum*.

Estate of Edgar A. Berg et al. v. Comm.

Date of Opinion:	June 20, 1991; appealed with decision October 5, 1992
Date of Valuation:	June 6, 1985
Type of Business:	Real estate holding company
Name of Company:	Vaberg Properties, Inc.
Property Valued:	Decedent's 26.92 percent interest in Vaberg Properties, Inc.
IRS Value:	30 percent discount (20 percent minority interest, 10 percent lack of marketability)
Taxpayer Value:	60 percent discount (40 percent minority interest, 20 percent lack of marketability)
Court's Opinion:	30 percent discount (20 percent minority interest, 10 percent lack of marketability)
Main Areas of Dispute:	Discounts for lack of marketability and minority interest; undervaluation penalties

Cite

T.C. Memo. 1991-279.

Background

Vaberg Properties, Inc. (Vaberg) in Grand Forks, North Dakota, was incorporated January 1, 1985, as the result of a reorganization of Vaberg, Inc., Extraman Corporation, Dakota Properties (a partnership), and Sunny Nodak Farms (a partnership). Vaberg stock had not been sold, either publicly or privately.

Vaberg owned (at the time of decedent's death): Louise Apartments, Dana Apartments, Gateway Manor, Stanford Arms, Red River Terrace, Hatton Apartments, Vaberg Office Building, Truck Garage Building, Sunny Nodak Farms (undeveloped land), North Star Inn, furniture, and fixtures.

Decedent held a 26.92 percent interest in the corporation. The other ownership interests were as follows: 33.99, 33.99, 0.97, 3.42, 0.70, and 0.01 percent.

Parties agreed that the fair market value of the decedent's stock in Vaberg at the time of his death, before any discounts, was $1,082,184 (26.92 percent of $4,020,000). They agreed that the net asset value approach was applicable.

Taxpayer's Position

- Petitioner applied a 60 percent discount to decedent's shares of Vaberg stock.
- C. J. Whalen, CPA, testified for the taxpayer. "C. J. Whalen is an experienced certified public accountant who has served on the faculty of several universities. He has also served as an expert witness in several cases that involved the determination of the effect of minority interest discount and lack of marketability discount. However, Whalen has no formal education as an appraiser."
- Whalen determined a minority interest discount of 40 percent, through use of *Estate of Andrews v. Commissioner* as well as a study of 100 transactions (1961 to 1983) by H. Calvin Coolidge, which determined an average minority discount of 39.9 percent. These studies were published in *Estate Planning* in 1975 and 1983.

- "Whalen determined that a minority interest discount of 40 percent was appropriate because a 26.92 percent minority interest has no voice in corporate affairs, and cannot compel any return on investment. Further, he reasoned that there is no insurance that the value of the interest will ever be recovered on a timely basis."
- Whalen determined a lack of marketability discount of 20 percent, through use of five studies of restricted stocks. These studies showed lack of marketability discounts ranging from 32.6 percent to 45 percent (1966-1982).
- "Whalen found that a lack of marketability discount was also proper because there is no ready market for the stock interest held by petitioner. In addition, normal purchase incentives did not exist. That is, a prospective buyer could have no basis to expect any dividend yield nor were there real growth prospects for the corporation. Finally, there was no indication that the other shareholders or any other person had any plans or need to ever acquire petitioner's interest."
- Whalen also testified at trial on an alternative method:

  > He determined that the U.S. Government bond rate for long-term Government bond investments was between 10 and 11 percent in 1985. He then reasoned, using a present value table and a 10 percent rate of return for 10 years, that the present value of an investment in the decedent's Vaberg stock was 40 percent of its undiscounted value as of the date of death. Whalen reasoned that the appropriate total discount for minority interest and lack of marketability is therefore 60 percent of its asset value.

- Arthur H. Cobb, CPA, president of Cobb, Ludington and Associates, Ltd., a capital finance and litigation support firm, also testified for the taxpayer.
- "Cobb is an experienced certified public accountant who has served as a professor at a university. Cobb has no formal training as an appraiser, but has provided advisory services related to valuation of equity interests, mergers, acquisitions, leveraged buyouts, employee stock ownership plans, and litigation."
- "Cobb concluded that a minority interest discount is appropriate because the 26.92 percent in Vaberg owned by petitioner is without control due to the existence of two blocks of 33.99 percent. A minority interest, Cobb reasoned, cannot independently elect the board of directors, direct management of the company, force the sale or liquidation of the company's assets, cause distribution of the company's assets, or cause distribution of dividends."
- "The average premium paid over market price for companies engaged in the real estate industry was 41.6 percent in 1985 (according to a study of publicly announced formal transfers of ownership of at least 10 percent of a company's assets or equities, where the purchase price was at least $500,000). This study indicated that the all industry average premium paid over market was 37.1 percent in 1985." He concluded to a 30 percent minority interest discount.
- "Cobb finds that a lack of marketability discount is appropriate because there has been no ready market for equity interests in Vaberg, and any equity investment in Vaberg is an illiquid investment. Cobb reasons that an investment in Vaberg would constitute an assumption of substantial risk because its holdings are not diverse in geographic location." Cobb also went on to talk about the changes in the population in the Grand Forks, North Dakota, area as well as the

constraints in the real estate marketplace due to uncertainty in the proposed changes in taxation for real estate investments.
- "Discounts related to marketability customarily range from 10 percent to 90 percent and the midpoint of the range is generally 30 to 40 percent; according to industry and Security [sic] and Exchange Commission studies." Based on this, Cobb finds that a 40 percent lack of marketability discount is appropriate.

IRS Position

- A total discount of 30 percent was applicable to the decedent's Vaberg stock.
- Scot A. Torkelson, William C. Herber, and Robert J. Strachota, of Shenehon Associates, a real estate and business valuation firm, testified for the IRS.
- "Scot A. Torkelson (Torkelson), a professional appraiser, has completed courses sponsored by the American Society of Appraisers in research and analysis of business valuations, advanced valuation, and closely held business valuation. He is an associate member of the American Society of Appraisers, Business Valuation Section. William C. Herber, a professional appraiser, has completed an advanced business valuation seminar, a closely held corporations valuation seminar, four business valuation courses, and a business valuation strategy seminar. He is an associate member of the American Society of Appraisers, Business Valuation Section, and is a member of the Institute of Business Appraisers. Robert J. Strachota, a professional appraiser, has completed courses in eminent domain valuation, going concern valuation, and two courses in valuation of businesses and professional practices. He is a member of the American Institute of Real Estate Appraisers, an associate member of the American Society of Appraisers, Business Enterprise Section, and a member in the Institute of Business Appraisers."
- Torkelson concludes that a 20 percent minority interest discount is appropriate.
- "We have examined the most similar publicly-traded stock available. Real Estate Investment Trusts, or REITs, trade on the public markets at a discount from their actual appraised net real estate value, reflecting the minority interest of the stockholders (public markets reflect minority interest market values). A study performed in December 1984 by Robert P. Oliver, ASA, published in *Business Valuation News*, June 1986, compared the market price of REITs as a percentage of net asset value. The market prices reflected minority interest stock transactions at that time. The resulting discount indicated an average 24 percent discount from net asset value to market value. This discount from net asset value arises because investors are acquiring a minority interest position in the respective Real Estate Investment Trusts." Torkelson lowered the discount because "the 26.92 percent ownership position under evaluation is significantly greater than the minority positions which generally occur among the publicly traded REITs (usually under 5 percent). Additionally, the subject's real estate properties are easily saleable as smaller residential apartment and commercial properties, unlike the publicly traded holdings, which are typically much larger properties and therefore more difficult to sell."
- In determining the discount for lack of marketability, Torkelson relied on restricted stock studies; most particularly the March 1973 "Taxes" article by Robert E. Moroney.

- Torkelson also examined three primary factors in determining the lack of marketability discount: extent of minority interest, quality and risk factors of the real estate or equity, and the company organization. This examination led to a 10 percent lack of marketability discount.
- His support for these factors was that:

  - "The subject company is comprised of three primary shareholders owning 94.9 percent of the total outstanding stock. Therefore, the discount for lack of marketability would tend to be lower than a minority interest with a small ownership position, or in an enterprise with one controlling interest shareholder."
  - "The subject properties are fairly typical smaller apartment complexes and commercial properties with greater salability than much larger commercial properties would have in the publicly traded holding companies, thus reducing risk. The fact that the assets of the corporation are cash, land and building, with no intangible assets, also reduces the risk of the investment. With this in mind, we find that the assets of this holding company are of a lower risk when compared to other alternative types of business in the marketplace, and are of good overall salability due to the sizes and types of the buildings. Therefore, our discount for lack of marketability by this factor would tend toward the low to mid ranges of discount."
  - "There are no apparent restrictions placed on the sale of these shares, and the appreciation of real estate value over the past five years has made real estate holding companies quite valuable as real estate values tend to exceed the rates of inflation throughout the period particularly in growth areas such as Grand Forks, North Dakota. We would therefore place the discount for lack of marketability at the low to mid-range point."

- Torkelson also relied on an article dealing with market discounts for undivided minority interests in real estate. The median overall discount was 39.7 percent, which was inclusive of both lack of marketability and minority interest. "Torkelson found that the subject minority interest of 26.92 percent exceeds the median 10 percent minority interest in the study, and therefore would tend to have a lower discount rate. Also, with the existence of only three major shareholders, petitioner is able to exercise considerable influence on the business. Therefore, Torkelson finds, a total discount rate of 30 percent for minority interest and lack of marketability is appropriate."

Court's Opinion

- "The minority discount is recognized because the holder of a minority interest lacks control over corporate policy, cannot direct the payment of dividends, and cannot compel a liquidation of corporate assets."
- "A lack of marketability discount, on the other hand, reflects the fact that there are no ready markets for shares in a closely held corporation."
- Petitioner relies too heavily on the decision of *Estate of Andrews v. Commissioner.*
- "The fact that petitioner found several cases which approve discounts approximately equal to those claimed in the instant case is irrelevant. Therefore, in

deciding the appropriate discounts in the instant case we will take into account all relevant facts and circumstances of petitioner's interest in Vaberg, and do not consider the amount of discount applied in other cases cited by petitioner as persuasive."

- "We find the appraisal by Whalen, who is not a certified appraiser, unpersuasive. . . . Whalen does not discuss the size of the minority interest involved, the equity structures of the corporations, the types of properties, or any other relevant circumstances, such as restrictive agreements." These comments concern Whalen's comparison to the 100 unidentified transactions from the Coolidge study.
- "We attach no weight to Cobb's appraisal. His sole source of support is an unidentified study dealing with public announced formal transfers of ownership of a company's assets or equities. There was no such transfer to Vaberg's assets or equities as of the date of valuation. Cobb provides no analysis of the appropriate discount for minority interest with respect to the decedent's interest in Vaberg."
- "Torkelson's analysis is persuasive because he relies on very specific studies of comparable properties, and then adjusts the minority interest discount for the relevant factors of decedent's interests. Petitioner's appraisals, on the other hand, are exceedingly general and lacking in specific analysis of the subject interest. We conclude that respondent has established that the appropriate discount for minority interest in the instant case is 20 percent, and we therefore sustain his determination."
- "Whalen's appraisal of discount for lack of marketability is unconvincing and insufficient to meet petitioner's burden of proof."
- "Cobb offers a cogent analysis of why a discount for lack of marketability is appropriate in the instant case. However, respondent agrees that such a discount is appropriate: the issue is the *amount* of the discount. Cobb offers no analysis of the appropriate amount of the discount, and we therefore regard his appraisal as irrelevant."
- "Torkelson begins his analysis with a comparison of restricted versus unrestricted blocks of stock. We find this aspect of his appraisal unpersuasive. However, Torkelson then examines specific factors that determine the amount of a discount for lack of marketability, and applies these factors to the instant case. Because of his analysis of specific factors related to the value of the decedent's interests in Vaberg, Torkelson's methodology is convincing and superior to that of petitioner's expert witnesses. In addition, due to the greater experience, education, and professionalism in appraising business interests by Torkelson, Herber, and Strachota, we place greater weight on respondent's appraisal."
- "Due to petitioner's failure to offer evidence showing that a greater discount for lack of marketability is warranted, and due to the convincing analysis offered by respondent is support of his determination, we sustain respondent's determination that the appropriate discount for lack of marketability is 10 percent."
- In terms of applying an addition to tax, for a valuation understatement, the court opined that "Petitioner's reporting of the decedent's Vaberg stock was vague, cursory, and inadequate, particularly given that petitioner was granted an additional 3 months to accurately determine the value of the shares. In preparing its estate tax return, petitioner did not commission an appraisal of the fair market value of the Vaberg stock, relying entirely on *Estate of Andrews v. Commissioner, supra.,* an opinion which provides no support for petitioner's valuation . . .

Petitioner's reporting of the value of decedent's interest in Vaberg demonstrates a lack of effort to reasonably determine the appropriate discounts."

- "In addition, the expert reports submitted by petitioner were lacking in substance and analysis. The authors of the reports were not professional appraisers, had no formal education in the value of business enterprises, and were not members of any professional associations involved in the education and certification of appraisers."
- "Petitioner has failed to carry its burden of showing that respondent abused his discretion in determining that petitioner failed to show a reasonable basis existed for the valuation on petitioner's 1986 estate tax return or that the claim was made in good faith. We therefore sustain respondent's determination with respect to the addition to tax pursuant to section 6660."
- It is important to note that, on appeal, the discounts determined by the IRS were upheld. However, the judge dismissed the application of the under valuation penalty as he felt that petitioners did their duty by hiring experts to assist them in determining the value.

Estate of Milton Feldmar et al. v. Comm.

Date of Opinion:	September 12, 1988
Date of Valuation:	March 30, 1982
Type of Business:	Selling and underwriting insurance coverage
Name of Company:	United Equitable Corporation
Property Valued:	Value of shares (79.5 percent) of common stock
IRS Value:	$46.60 per share or $35,776,524 in aggregate
Taxpayer Value:	$10 per share or $7,678,000 in aggregate
Court's Opinion:	$12.45 per share or $9,559,110 in aggregate
Main Areas of Dispute:	Key person discount, the use of a control premium, discount for specific risk, the use of prior sales of stock in determining value, the use of the market approach

Cite

T.C. Memo. 1988-429.

Background

This is an estate tax case with the date of death setting the valuation date at March 30, 1982. Decedent held 767,800 shares of common stock in United Equitable Corporation (UEC), which was a 79.5 percent controlling interest. UEC was an Illinois-based holding company. Its direct and indirect holdings were: United Equitable Life Insurance Company (UELIC) and its wholly owned subsidiary, United Equitable Insurance Company (UEIC); American Warranty Corporation (AWC) and Action Associates (Action). UEC sold and underwrote life insurance and individual and family accident and health insurance as well as vehicle warranty/service contracts and collateral protection services. "Of UEC's 1981 consolidated revenue, 57 percent consisted of warranty and collateral protection services income, and 40 percent consisted of accident, health and life insurance income."

As of December 31, 1981, UEC had total assets of approximately $90 million. It also had total shareholder's equity of approximately $30 million. Total income

(revenue) was approximately $50 million, with income before taxes of $2.2 million. While revenues were up from 1980's figures, income declined. The company had no financial statements as of the date of death, March 30, 1982.

> The precipitous drop in UEC's net income and profit margin between 1980 and 1981 is attributable to a multitude of problems UEC encountered during that period. First, UEC was performing poorly in connection with its direct response marketing of the accident and health insurance lines. Second, UEC was suffering a very high lapse rate in connection with its life insurance sales that caused an accelerated amortization of those policies' acquisition costs. Third, UEC was required to make a large adjustment in 1981 to AWC's reserve for claims losses. Fourth, UEC's earnings were also impacted by the accruals UEC made for payment of the contingent consideration owed in connection with the acquisition of Action in 1980. Finally, UEC experienced, in 1981, a combination of a relatively low revenue gain and a narrowed profit margin caused by an inability to control salary and administrative expenses. Throughout 1979 and 1980, salary and administrative expenses grew in line with revenues. In 1981, however, such expenses grew, in relation to 1980, by approximately 29.2 percent whereas revenue declined sharply.

Several other important factors affected the value of the stock. One was a lawsuit from a former employee with a claim against UEC in the amount of approximately $40 million. "At the time of decedent's death, no resolution of the suit filed by UEC against Farrar, or of the cross-claim filed by Farrar against AWC and UEC had been reached."

UEC was also dependent on the decedent. "From its inception until the date of decedent's death, UEC has been a company highly dependent upon specialized marketing techniques which are employed in selected markets to encourage the sale of UEC's nontraditional insurance products and services. Throughout the company's history, decedent had been heavily involved in the daily operation of UEC. Decedent was the creative driving force behind both UEC's innovative marketing techniques, and UEC's creation of, or acquisition and exploitation of, new products and services." It was also felt that decedent's salary was approximately $100,000 higher than executives in similar positions in comparable companies. However, the company felt that it would be extremely difficult to replace the decedent at any price. There was also an insurance policy in the amount of $2 million on decedent's life in which UEC was the beneficiary.

There were also prior share transactions in the company's stock. "The parties have stipulated that as of October 1, 1979, the fair market value of the common stock of UEC was $8 per share. In 1981, UEC purchased 367 shares of its common stock for $10 per share. Further in 1981, under the terms of a stock purchase plan, UEC sold 12,500 shares of its common stock from its treasury stock holdings to the then-existing president of UEC at a price of $10 per share."

Taxpayer's Position

- Petitioner offered the testimony of Milton L. Meigs, an investment and financial analyst.

- "In the course of his examination, Meigs conducted an in-depth and thorough evaluation of UEC, its subsidiaries, the business conducted thereby, and the economic trends existing at the time of decedent's death."
- Meigs relied solely on UEC's 1981 earnings, since he felt that they were indicative of the future performance of the company.
- Meigs used a market approach using publicly traded comparable companies.
- Meigs relied on a price/earnings ratio and market/book value ratio based on five publicly traded companies.
- "First, Meigs concluded that UEC's value should be lower than that value which would be reached using the quantitative factors of the comparable companies because there was a 'serious management vacuum' created by the death of decedent. From this, Meigs anticipated that UEC's earnings would be negatively impacted in the future. Second, Meigs reasoned that UEC's value should be even lower still, as such related to the comparable companies, because the pending litigation brought by Farrar would cast a cloud on UEC's attractiveness to any potential investor."
- UEC was publicly traded between 1973 and 1976. Meigs also referred to various valuation ratios of the company during that time period. He stated that "the market conditions for that period for stocks generally, and insurance stocks specifically, were, on the average, not materially dissimilar to the market conditions of early 1982."

IRS Position

- The IRS offered the testimony of Robert V. McMahon, an independent contractor associated with a national business brokerage firm.
- "Finally, by taking one more average, the average of his projected annual net incomes, McMahon concluded that UEC would realize, for years after 1981, average annual net income of $6,900,000."
- McMahon relied mostly on the financial records of the company from 1976 through 1981.
- McMahon did not interview any of the management personnel of the company.
- "In the course [of] his valuation, McMahon employed an approach based upon an investor's anticipated return on investment. Further, the analysis McMahon used is based upon projections he made concerning UEC's future earnings, rather than upon UEC's past earnings experience."
- Using historical margins and growth rates, McMahon calculated UEC's income and projected such for each year from 1982 through 1988. McMahon used a higher level of income "despite having observed that UEC's profitability between 1977 and 1981 was in decline."
- To calculate the return on investment, McMahon "[c]onsidered the yield on 10 years United State Treasury Notes, which was 13 percent as of such date, and added an additional 2 percent for the inherent risk, and for the lack of liquidity an investor would face with an investment in UEC. Thus, McMahon concluded that an average investor would require a 15 percent rate of return on investments in UEC as of December 31, 1981."
- McMahon concluded that the shares held by the decedent were not 79.5 percent of UEC's outstanding stock. "[T]hrough a convoluted weighting formula for

which he offered no explanation, McMahon concluded that, in reality, the 767,800 shares decedent held were equivalent to 82.48 percent of UEC's total shares outstanding. This is tantamount to applying a premium to decedent's holdings for the reason that an investor would be acquiring control of UEC when such investor bought decedent's share in UEC."

- Respondent also offered the testimony of Steven R. LaMantia, a professional appraiser.
- LaMantia also used a market approach using comparable public companies.
- LaMantia relied on nine corporations that he found to be comparable and applied a price/earnings ratio of 6.5 first to UEC's 1981 net income and then to an average of UEC's net income from the preceding five years. The first calculation resulted in a value of $13.3 million whereas the second valuation resulted in value of $23.1 million.
- "Because LaMantia felt UEC's 1981 earnings were being skewed by losses incurred by Action, LaMantia focused upon the value achieved by the capitalization of UEC's average earnings from the preceding five year period."
- "LaMantia's analysis operated under the impression that Action had incurred losses in 1981 of approximately $1,500,000. In fact, Action's 1981 losses were only $100,000."
- LaMantia did determine that UEC's lower earnings in 1981 would continue in the future. As such, he lowered his value from $23.1 million to $20 million for the whole company, reflecting a price per share of $20.72.
- "LaMantia then applied a premium of 20 percent in recognition of a premium the average investor would pay when purchasing a controlling share of a corporation's stock." His conclusion was $24.75 per share, or $19 million in aggregate for the block of stock owned by decedent.

Court's Opinion

- "The sole issue for decision is the date of death value of 767,800 shares of UEC common stock owned by decedent at his death."
- "When the date of death is the valuation date, post-mortem events may be considered, however, for the limited purpose of establishing that the willing buyer and seller's expectations were on the valuation date and whether these expectations were reasonable and intelligent."
- "Subsequent events may serve to establish both that the expectations were entertained and also that such expectations were reasonable and intelligent."
- "After reviewing the valuation methods adopted by the parties' experts, we are not satisfied that any one method, or the results reached thereby, should be adopted by us in toto."
- The court opined that it appeared that Meigs chose a value of $10 per share and then attempted to justify such value by referring to the public prices of the company.
- The court also did not understand, or necessarily agree with, Meigs's adjustments to the multiples used from the publicly traded companies.
- The court was less enamored with McMahon's valuation.

> Initially, we observe that McMahon relied upon market numbers generated in the abstract by *Forbes* magazine. Further, in applying the numbers so generated, McMahon is caught in the trappings presented by the application of rote formulae. That is, as is apparent from the method by which he arrived at an average annual net income, McMahon is enticed into a false sense of security in his numbers merely because they are averages. With respect to the use of averages, it has been said: averages may be deceiving. Two corporations with 5-year earnings going from the past to the present represented by the figures in one case of 5, 4, 3, 2, and 1 and in the other by the same figures of 1, 2, 3, 4, and 5 will have the same 5-year averages, but investors will quite naturally prefer the stock of the later whose earnings are consistently moving forward.

- The court also had problems with LaMantia's analysis in that it ignored many of the significant problems faced by UEC as of the time of the valuation as well as LaMantia's reliance on a five-year average even though he observed that UEC's earnings had dropped substantially.
- The court decided to value the stock using its own methodology. "From our review of the facts concerning UEC and its family of companies, as such facts existed on the date of decedent's death, we find that UEC was suffering from a serious decline in its profitability without much hope for a recovery in the near future."
- The court decided that the company should be valued using a comparative market analysis using price/earnings ratios, price/book ratios as well as prior transactions of UEC stock.
- In determining a price/earnings ratio, the court weighted UEC's earnings as follows: 1981 earnings at 0.7, 1980's earnings at 0.2, and 1979's earnings at 0.1. The court chose a P/E ratio of 5 "because of the drastic decrease in profitability UEC saw that year, and because UEC's investment portfolio promised to see reduced income in the future . . ."
- The court determined the P/E value of $14.30 per share.
- The court used a price/book value ratio of 45 percent that included the $2 million amount for the life insurance policy, which was the amount UEC would receive from the policy.
- The court determined the price/book value of $15.09 per share.
- The court relied on prior transactions. "We find that such history of shares sold is relevant to our present inquiry for two reasons. First, that the prices at which the stock sold over the years increases in line with the overall growth of UEC reflects that such prices do indicate the stock's relative fair market value on those dates. Second, the prior sales are relevant because of the close proximity in time the most recent of such sales bears to the valuation date."
- Transactions relied on were $10 per share in 1981, $8 per share in 1979, and $6 per share in 1976.
- "For our purposes, we shall rely only on the sales of stock occurring in 1981." However, the court applied a premium of 30 percent "[b]ecause such sales involved a relatively small number of shares of stock and was made to an officer of UEC under a stock purchase plan, however, we find that it would be appropriate to apply a premium to the sales price to determine the stock's true fair

market value." The court determined a value of $13 per share based on prior transactions.

- The court weighted the price/earnings result by 0.6, the book value result by 0.3 and the prior sales by 0.1 to arrive at a weighted average value of $14.41 per share.
- In terms of a control premium, the court opined: "Initially, we recognize that an investor would be willing to pay a premium above fair market value for a block of shares which represent a controlling interest in UEC (control premium). The shares held by decedent at the date of death represent such a controlling interest and a control premium should, therefore, be applied."
- The court also recognized a key person discount and stated:

> We further recognize, however, that where a corporation is substantially dependent upon the services of one person, and where that person is no longer able to perform services for the corporation by reason of death or incapacitation, an investor would expect some form of discount below fair market value when purchasing stock in the corporation to compensate for the loss of that key employee (key employee discount). We find that Milton Feldmar was an innovative driving force upon which UEC was substantially dependent for the implementation of new marketing strategies and acquisition policies. Therefore, we find that a key employee discount is appropriate.

- Respondent argued that a key person discount would be offset by the insurance policy as well as the fact that UEC could rely on the services of the management team already in place or that it could obtain the services of a new manager comparable to the decedent. The court's opinion was "We do not find merit in such a position. The life insurance proceeds UEC was to receive upon decedent's death are more appropriately considered as a non-operating asset of UEC." The court further said:

> With respect to the existing management, Meigs conducted interviews with such managers and found them to be inexperienced and incapable of filling the void created by decedent's absence. By contrast, neither of respondent's experts offered an opinion on such management's ability to replace decedent. From the evidence presented, we conclude that UEC could not compensate for the loss of decedent by drawing upon its management reserves as such existed on the valuation date.

- The court decided that an investor would be willing to pay a 15 percent premium for control but also would expect a 35 percent discount for the loss of the key employee.
- "A control premium of 15 percent is proper in the case at hand because, although an investor would be acquiring a corporation over which he could exercise dominion, that investor would also be acquiring a corporation which was already facing declining profitability and serious concerns regarding the adequacy of its claims reserves."

- "A key man discount of 35 percent is appropriate in this case because UEC suffered a serious loss when decedent took to his grave his considerable expertise in finding and exploiting innovative insurance products and services."
- "Such 35 percent discount should be reduced, however, to account for UEC's potential for finding a new leader, from outside of its existing management, to replace decedent. Although we find it to be a very remote possibility that UEC may find a new helmsman with knowledge, experience, innovative skills, and resources comparable to those of the decedent, we shall reduce the key employee discount to be applied from 35 to 25 percent to account for such potentiality."
- The court netted the 15 percent premium for control and the key employee discount of 25 percent into a net downward adjustment of 10 percent. This resulted in a value of $12.97 per share.

The court then reduced this value by $0.52 per share, or approximately 4 percent, to $12.45 to reflect the lawsuit facing UEC and to account for the possible decrease in value due to decreasing earnings in UEC between the date of the financial information used in the valuation, December 31, 1981, and the March 30, 1982, valuation date.

CHAPTER 9

Report Writing

A written report is the culmination of many valuation engagements. In certain circumstances, particularly related to litigation, counsel in the case may request an oral report through testimony at deposition and/or trial. In certain consultation engagements, the client may request only an oral report or brief written summary. The type and format of the report to be provided may be dictated by the nature of the valuation engagement and/or the needs of the client.

The written report must answer six questions:

1. What was the analyst asked to do?
2. What standard of value was used?
3. What information did the analyst reference or utilize?
4. What procedures did the analyst perform?
5. What assumptions and limiting conditions were applicable?
6. What conclusion of value was reached?

ValTip

A full written report should provide all detail necessary to permit another qualified analyst to use the same information and to understand the work done and reach an informed valuation conclusion.

Particular report-writing standards are applicable in certain types of engagements. A full written report is presented as an addendum to this chapter.

USPAP ENGAGEMENTS

The Uniform Standards of Professional Appraisal Practice (USPAP) are applicable to those who adhere to USPAP and/or where the intended user of the appraisal report is a federally insured depository institution and the intended use is a federally related transaction. There are different types of reports depending on the appraisal discipline.

Real Estate and Personal Property Reports

When USPAP is applicable, three types of written reports may be issued for real estate and personal property appraisals:

1. Self-Contained Appraisal Report
2. Summary Appraisal Report
3. Restricted Use Appraisal Report

When third-party users are involved, USPAP indicates that the Self-Contained Appraisal Report or the Summary Appraisal Report is the proper report to use. When the information is intended only for client use, the Restricted Use Appraisal Report is permitted.

The essential difference between the reports is content and depth of information. The Self-Contained Appraisal Report is the most comprehensive and complete report. The Summary Appraisal Report contains much of the same information as the Self-Contained Appraisal Report but in summary form without the same level of detail. The Restricted Use Appraisal Report is for client use only and usually contains less detailed information.

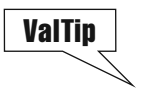
Each of these reports may be prepared with any of the types of valuation engagements permitted by USPAP. These include the limited appraisal and the complete appraisal. The limited appraisal contains one or more scope restrictions that cause the analyst to invoke the departure provision. The complete appraisal contains no such scope limitations.

Business Valuation Reports

In contrast to the three types of reports available for real estate and personal property, business valuation has only two types of reports:

1. Appraisal Report
2. Restricted Use Appraisal Report

Appraisal reports are provided when the intended users are other than the client. When the client is the only intended user, a Restricted Use Appraisal Report may be provided. Generally, the main difference in the two business valuation reports is the content and level of information. See Chapter 10 for a detailed discussion of USPAP standards.



Although many analysts often comply with USPAP as a general rule, most of the reports that analysts write are not conducted under the circumstances specified by USPAP and are not required to be USPAP reports.

TYPES OF VALUATION ENGAGEMENTS AND RELATED REPORTS

Valuation engagements conducted by analysts are either complete valuation engagements or other valuation engagements. Other valuation engagements encompass all engagements that are not complete valuation engagements. They could include (but are not limited to) limited scope valuation engagements, consulting valuation services or calculations agreed to with a client.

Analysts primarily produce two types of valuation reports: "complete" and "other."

COMPLETE VALUATION REPORT

The complete valuation report is appropriate when the analyst has been engaged to prepare a complete valuation of a business, an interest in a business, or an intangible asset. It is the primary work product of the complete valuation process and should be prepared with objectivity and integrity in accordance with the business valuation standards and procedures. It should describe valuation procedures in sufficient detail to enable the client to understand the work performed and the conclusion reached. While there is no universal format for reporting on a complete valuation, there is general consensus on the elements that can be included. A complete valuation report usually contains the following report sections:

1. Valuation summary
2. Introduction
3. Sources of information
4. Analysis of the company or entity
5. Analysis of economic conditions
6. Analysis of industry conditions
7. Financial statement analysis
8. Valuation approaches and methods considered
9. Valuation approaches and methods used
10. Consideration of applicable discounts and premiums (if any)
11. Nonoperating and excess assets
12. Conclusion and reconciliation
13. Appendixes

Each of these sections documents an important part of the analyst's thought process toward reaching the conclusion of value. In any particular engagement, this listing of sections may be added to or deleted from as the engagement circumstances dictate. If the report is to be considered a complete valuation report, most if not all sections will be appropriate and necessary. The addendum to this chapter provides a sample complete valuation/appraisal report.

Valuation Summary

The valuation summary usually contains the following information in summary form. It is intended to be an "executive summary" of the detailed information that follows.

- Identity of the client
- Intended use of the valuation
- Identity of the business, business interest, or intangible asset being valued
- Ownership interest being valued and whether the interest being valued has control capabilities or not
- Purpose of the valuation
- Standard of value used in the valuation
- Premise of value
- Effective date of the valuation
- Date of the report
- Valuation conclusion

The valuation summary provides a synopsis of the entire report in just a single page or a few pages. It is intended to facilitate ease of use, not to be a substitute for the more detailed information that follows.

See the sample report for an example of a valuation summary.

Introduction

The introduction section of the report should contain sufficient information to introduce the specifics of the valuation assignment and any features unique to the engagement. The introduction section may contain the following information:

- Identity of the client
- Purpose of the valuation
- Intended use and users of the valuation
- Identity of the entity being valued
- Identity of the interest being valued
- Applicable standard of value
- Applicable premise of value
- Any other introductory information the analyst deems useful to enable the reader to understand the work performed
- Reference to Revenue Ruling 59-60 if applicable
- Restrictions (if any) on use of the report

The introduction section sets the stage for the detailed information that is to follow. Its purpose is to provide an overview of the engagement in greater detail than that provided in the valuation summary section. It is also the place in which the analyst sets forth any scope or other limitations in the valuation.

One particularly important element discussed in the introduction section is the standard of value to be employed. The standard of value provides the base for valuation decisions made during the course of the valuation work.

See the sample report for an example of an introduction section.

Sources of Information

The sources of information section of the report should identify the information received and developed through the analyst's research during the course of his or her work. This information could include:

- Statement as to whether or not the facilities were visited
- Identification of the persons interviewed
- Financial statements analyzed
- Tax information analyzed
- Industry, market and economic data analyzed
- Other company documents analyzed
- Statement as to whether or not any assurance procedures were performed on the information analyzed

ValTip

In certain engagements, such as litigation, the analyst might not be granted access to the facilities. If so, the introduction section can explain this and also what was done to obtain the knowledge normally gained during a site visit.

See the sample report for an example of the Sources of Information Section.

Analysis of the Company or Entity

Revenue Ruling 59-60 emphasizes eight factors the analyst should consider in assessing the risk inherent in the subject entity. These include:

1. The nature of the business and the history of the entity from inception
2. The economic outlook in general and the condition and outlook of the specific industry in particular
3. The book value of the entity being valued and the financial condition of the business
4. The earnings capacity of the entity
5. The dividend-paying capacity of the entity
6. Whether the entity has goodwill or other intangible value
7. Prior sales of the entity stock and the size of the block to be valued
8. The market price of stock in corporations engaged in the same or similar lines of business whose stock is actively traded in a free and open market either on an exchange or over the counter.

The "Nature of the Business and Its History from Inception" is part of the company analysis section of the report. This section should contain enough information about the company for the reader to get a sense of the risks and rewards associated

with an ownership interest in the company and the depth of evaluation done by the analyst. Information in this section of the report may include (but not be limited to):

- A description of the subject entity including form of subject organization (corporation, partnership, proprietorship, LLC etc.) and, if incorporated, the state of incorporation
- Company history and background information
- Description of the entity's facilities
- Ownership information
- Description of the organization structure and management team
- Description of the officers and directors
- Description of the key employees
- Description of the entity's products
- Description of the entity's geographic markets
- Description of the entity's industry markets
- Description of key customers
- Description of the entity's competition
- Description of other business risks faced by the entity

As part of this company analysis, it is appropriate for the analyst to comment on the external and internal business risks faced by the subject entity. Factors suggesting greater risk would include a small group of customers, a limited management team, a small number of suppliers, and a shrinking market for the entity's products. Factors suggesting lesser risk would include a large homogeneous group of customers, a broad-based management team, a diversified group of suppliers, and a growing market for the entity's products. At the conclusion of this section, the overall company risk can be summarized.

See the sample report for an example of the company analysis section.

Analysis of Economic Conditions

The economic analysis describes the condition of the economy in general as of the valuation date and conditions in the regions in which the company operates. Included might be analysis of:

- Global regions
- United States or other nation's economic conditions
- State or regional economic information
- City or community economic information
- Future outlook for the regions in which the entity operates

Typically, it includes a macroanalysis of the overall economy and a microanalysis of the economy in the geographic region in which the company operates. The purpose of the economic analysis is to assist the analyst in measuring the risk associated with the current national economy and the local economy in which the subject company operates.

See the sample report for a sample of economic analysis.

Analysis of Industry Conditions

The analysis of industry conditions provides information about the industry or industries in which the subject entity operates. The industry conditions section may contain:

- Identity of the applicable industries
- Description of the applicable industries
- Information regarding suppliers or sources of supply
- Information regarding applicable government regulation
- Industry risks that impact the subject entity
- Future outlook for the industry or industries
- Impact of economic conditions in specific industries that will have influence on the subject entity
- Summary of the overall industry risk

This section assists the analyst in documenting the outside business forces that will influence the company's ability to compete. It fulfills one of the specific risk assessment requirements of Revenue Ruling 59-60.

See the sample report for an example of an analysis of industry conditions.

Financial Statement Analysis

Financial statement analysis is an important part of the analyst's work. Typically, five years of financial statements and/or tax returns are analyzed. More or less than five years might be considered if the particular entity has a longer or shorter operating cycle. If available, the auditors' report or the accountants' report and the related footnotes may be included in the analysis. The footnotes will include important information related to the entity's accounting policies, contingent liabilities, and future debt and lease payments.

The financial statement analysis often includes:

- A side-by-side comparison of the past five years' financials (or whatever number of years the appraiser deems relevant)
- Explanation of the reasoning for any adjustments the analyst deems appropriate to the balance sheet, income statement, or cash flow statement
- Comments on any unusual characteristics of the financial information
- Analysis of the common size company information and comparison with applicable industry information
- Discussion of any assets that will be treated as nonoperating or excess assets
- Identification of the assumptions used by those preparing the forecast if the discounted future income or cash flow method is used

See the sample report for an example of financial statement analysis.

Valuation Approaches and Methods Considered

One purpose of this section is to enable the analyst to set forth the reasoning used in considering the methods used to value the subject business, business interest, or

intangible asset. The analyst also has the opportunity here to provide the reasoning for rejecting any methods considered but not used.

See the sample report for an example of valuation approaches and methods considered.

Valuation Approaches and Methods Used

In this section of the complete report, the analyst should identify the selected valuation methods and provide the rationale and supporting data for their use. The section may include:

- Any balance sheet adjustments made by the analyst if the asset approach is used
- Identification of the work of other experts used in the asset approach, including real estate and equipment appraisers
- The rationale for the representative benefit stream selected (either income or cash flow), if the income approach is used
- A discussion of the method used in selecting or computing the discount rate or capitalization rate and the risk factors identified and utilized in arriving at the rate
- A listing of the risk factors considered in computing a weighted average cost of capital (WACC), if the invested capital model is used
- Identification of and detailed description of the selected guideline companies if the market approach is used with publicly traded company information
- Identification of applicable multiples utilized in the market approach and discussion of the rationale for their use
- Explanation of the basis on which the transactions were chosen and the reasoning behind the selected multiples, if the market approach is used with private company transaction data
- Conclusions drawn from prior transactions in company stock, if they are taken into consideration, and the reasoning used in determining that they were representative
- A detailed computation of value using the chosen methods

See the sample report for a discussion of the valuation methods used.

Analysis of Risk

Many factors are taken into consideration in the analysis of risk, including most of the factors set forth in Revenue Ruling 59-60. One tool available to the analyst in risk analysis is financial ratios. The financial information of the subject company is compared to the comparable financial information of other companies in the same industry or in the same Standard Industrial Classification (SIC) or North American Industry Classification System (NAICS) codes. Industry information is often available from trade associations or industry support groups. Risk Management Association publishes its *Annual Statement Studies* in which "common size" financial information is published by SIC or NAICS codes.

Comparing the subject company to others of similar size in its industry provides important insight into the risk factors present. The detailed financial information is often presented in the appendix to the report. These ratios are discussed in detail in Chapter 3.

See the sample report for a discussion of ratios, trends, and risk.

Consideration of Applicable Discounts or Premiums

Depending on the standard of value selected for the engagement and the valuation methodology employed, the application of discounts or premiums may be appropriate. If so, the report should document the support for the selected amount and types of discount or premium. See Chapter 8 for a detailed discussion of discounts and premiums.

The discounts and premiums section of the complete valuation report should identify the discounts and premiums considered and the ones deemed applicable. Some of the significant information to be considered include:

- The minority interest (lack of control) discount and/or the control premium
- The rationale and supporting evidence for the minority interest discount or control premium applied
- The discount for lack of marketability
- The supporting evidence for the discount for lack of marketability selected
- Consideration of other discounts that may include (but not be limited to):
  - Blockage discounts
  - Key person discounts
  - Trapped-in capital gain discounts
  - Portfolio discounts
  - Transferability restriction discounts

These discounts may have a significant impact on the final determination of value of the subject interest. The analyst must document the relationship between the subject entity and the supportive discount evidence.

See the sample report for an example of the discussion on discounts and premiums.

Nonoperating and Excess Assets

This is the section of the report wherein the analyst covers the treatment of any nonoperating or excess assets that might be present in the entity. Examples of such assets may include:

- Assets owned by the entity not used in the trade or business or not deemed necessary to the active conduct of the business
- An operating plant building owned by the business that will be treated as nonoperating (net of the related debt) and added to the value of the operating assets once that value has been estimated
- Investments in marketable securities (other than for short-term investment purposes)
- Excess assets identified by the financial statement analysis

See the sample report for an example of the discussion of nonoperating and excess assets.

Conclusion and Reconciliation

Once the analyst has made the computations of value under the methods selected, a conclusion of value must be reached and documented in the report. If more than one method was selected, the weight or reliance, either quantitative or qualitative, to be given to each method should be disclosed. The conclusion section of the complete valuation report should reconcile the valuation methods and specify the rationale for the conclusion of value.

See the sample report for a discussion of the valuation methods and the reliance afforded each one.

Appendixes

The appendixes are used to include information in the report that is not a direct part of the valuation calculation process but is an important part of the disclosures in the overall report. Information commonly found in the appendixes may include:

- Valuation certification and signature of the analyst
- Valuation assumptions and limiting conditions
- Qualifications of the analyst
- Reports of other experts

Valuation Certification and Signature of the Analyst

The valuation certification of the analysts responsible for the valuation should include (but not be limited to) statements similar to the following:

- Statement that the analyst's work, opinions, and conclusions contained in the report are limited only by the specified assumptions and limiting conditions and are the analyst's personal analysis, opinions, and conclusions
- Statement that the facts set forth in the valuation report are true and correct to the best of the analyst's knowledge and belief
- Statement that the engagement has been completed in conformity with the business valuation standards of the organization(s) to which the analyst must conform
- Statement that the analyst has no (or the specified) present or prospective interest in the subject property
- Statement that the analyst has no (or the specified) personal interest with respect to the parties involved
- Statement that the analyst has no bias with respect either to the property that is the subject of the valuation or to the parties involved with the engagement
- Statement that the analyst's engagement is not contingent on a predetermined result

- Statement that the analyst's compensation for the subject engagement is not contingent on a predetermined result or a direction on value that favors the cause of the client
- Statement that no one provided significant professional assistance to the person signing the report (If a person or persons did provide such assistance, they must be identified and the extent of their participation identified.)

ValTip

Analysts usually do not audit or perform review or any other assurance procedures on the historical financial information provided by the entity. They accept the information as accurate and state this in the assumptions.

The persons assuming responsibility for the valuation should sign the valuation certification.

See Appendix A of the sample report for an example of a certification.

ValTip

Some analysts include the assumptions and limiting conditions in the engagement letter as well.

Assumptions and Limiting Conditions

Every valuation report is based on certain assumptions and limiting conditions. One common example is a caveat on the accuracy of the entity's historical financial statements and tax returns.

The valuation report should contain a listing of the assumptions and limiting conditions the appraiser took into consideration during the valuation work. These assumptions and limiting conditions can be incorporated by reference into the analyst's conclusion of value.

See appendix B of the sample valuation report for an example of assumptions and limiting conditions.

OTHER BUSINESS VALUATION REPORTS

Other business valuation reports may be prepared for a variety of purposes that are specific to the respective valuation engagements. These other valuation engagements are often lesser in scope than a complete valuation engagement. For such reports, analysts may perform a number of procedures like those in a complete valuation,

but the scope is limited or the work desired by and arranged with the client is less than that required for the engagement to be a complete valuation. The reports prepared for such engagements may be lesser in scope and content than a complete valuation report.

SAMPLE REPORT

Addendum 1 of this chapter contains a detailed valuation/ appraisal report. It also contains a discussion of why certain topics were described and presented. Discussion areas are enclosed in a box for easy reference. This is an example for presentation purposes only. Valuation reports of individual analysts can vary greatly as to content, length, and style. This is not a standard report but it does illustrate the concepts discussed in this chapter. It is a full written report of a complete valuation analysis. It is also an "appraisal report" of a "complete appraisal" as defined in USPAP.

Note: **Some of the numbers do not tie together due to rounding issues that resulted in preparing this report for presentation. However, these variations are very minor.**

ADDENDUM—SAMPLE VALUATION REPORT, VALUATION OF THE COMMON STOCK OF ACME MEASUREMENT DEVICES, INC. AS OF MAY 31, 2000

Robert L. Smith, Attorney
Post Office Box 10000
Denver, Colorado 00000

Dear Mr. Smith:

At your request, we have performed a valuation analysis of Acme Measurement Devices, Inc. (Acme or the Company). The objective of this analysis was to determine the fair market value of a 13.1 percent minority, nonmarketable interest in the common stock, on a going concern basis, as of May 31, 2000 (Valuation Date). We understand that this valuation is required for and is to be used solely for gift tax purposes. No other purpose is intended or should be inferred.

Based upon our analysis and on the information contained in the accompanying detailed narrative report that follows, we have concluded that, as of the Valuation Date, the fair market value of the gift of common stock of Acme on a minority nonmarketable ownership interest basis, as of May 31, 2000, is approximately:

Value of 16,279 shares (minority block)	$1,334,878
Value per share	$ 82.00

This valuation is subject to the certifications presented in Appendix A and to the assumptions and limiting conditions presented in Appendix B.

XYZ Appraisal Associates PLLC
March 14, 2001

There is no universally approved format for a valuation report, but there is general agreement as to the elements that should be included. The purpose of the valuation assignment dictates the level of content and the elements addressed. In this brief cover letter, the appraiser introduces the reader to the content of the valuation report and identifies the client, subject of the valuation, standard of value, size and type of interest, assignment purpose, valuation date, and report date. This level of completeness is recommended to insure that the reader understands the assignment. References are clearly made to certifications and assumptions and limiting conditions of the report. All of these points are developed more clearly in later sections of the report. Analysts differ in opinion as to whether the cover letter should include the value conclusion. Some appraisers take the position that, if the value is given here, the reader will ignore the full content of the report and not understand the limitations of the analysis. Others stress that providing the value here gives useful information that better sets up the reader to know the destination before starting the journey of reading the report.

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Valuation Summary

Report Summarized:	XYZ Appraisal Associates PLLC issued the appraisal report summarized herein, plus appendixes, on March 14, 2001. This appraisal is subject to the Statement of Assumptions and Limiting Conditions contained in this report as Appendix B.
Subject of Appraisal:	A 13.1 percent minority nonmarketable interest in Acme Measurement Devices, Inc. as of May 31, 2000. The subject common stock represents the largest minority block.
Business Activity:	Acme is a manufacturer of electronic instruments for measurement of the physical properties of engineering materials. It began operations in 1965 and was incorporated in the state of Colorado on January 10, 1965. The Company is a C-corporation.
Purpose of Appraisal:	This valuation is required for gift tax purposes.
Premise of Value:	The Company is valued on a going concern basis, as opposed to a liquidation basis of value.
Standard of Value:	Fair market value
Basis of Value:	Closely held (nonmarketable), minority basis
Date of Value:	May 31, 2000 (Valuation Date)
Value Conclusion:	The fair market value per share of a 13.1 percent minority, nonmarketable interest in the common stock of the Company as of the Valuation Date, was approximately $82.00.

The valuation summary provides an important one-page overview of the report conclusion and the elements of the assignment. All of the information here will be covered and expanded in the sections of the report to follow. Much of the information provided here was on the cover letter, but some analysts do not provide the value conclusion on the cover letter. Is providing the information again so quickly redundant? Valuation reports always contain information that is repeated and expanded. Doing this provides clarification and helps remind the reader of the foundational elements of the assignment.

Description of Assignment

XYZ Appraisal Associates PLLC has been engaged by Robert L. Smith (Attorney) to determine the fair market value per share of a minority, nonmarketable ownership interest, on a going-concern basis, in the common stock of the Company, as of the Valuation Date, for gift tax purposes. The Attorney represents John J. Acme.

The names of the analyst and the client are clearly identified along with the size and type of the interest being valued. Valuations can be prepared for different purposes. Here, the purpose of the valuation assignment is given. The valuation should be used for no other reason or by any other users.

Standard of Value

Revenue Ruling 59-60 defines the fair market value of an item of property as "the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or sell, and both having reasonable knowledge of relevant facts."

Both the standard of value (definition) and, importantly, the source of the definition are provided. The standard of value provided here is applicable to all valuation assignments prepared for gift, estate, and income tax purposes. The analyst must carefully adhere to the definition in determining the relative significance of facts, the weighing of those facts, and the application of judgment to the valuation process. An analyst must guard against creating a differing standard of value by the inadvertent omission of elements or in the weighting of those elements.

Premise of Value

The Company is valued on a going-concern basis, as opposed to a liquidation basis of value.

Is this enterprise a viable going concern, or is it dead or dying? Identification of the premise provides the analyst's point of reference in reviewing future operational prospects for the business. In valuing a controlling interest (or any interest with the power to cause an asset sale), the analyst should consider whether the business would have a greater value in liquidation than as an operating entity.

Valuation Methodology

Generally accepted valuation methodology requires the analyst to gather, analyze, and adjust relevant information to perform the valuation as appropriate to the scope of work and to select and apply appropriate valuation approaches, methods, and procedures.

Consideration was given to the factors set forth in Internal Revenue Service Ruling 59-60, which outlines appropriate considerations for the valuation of closely held equity securities, specifically:

- The nature of the business and the history of the enterprise from its inception
- The economic outlook in general and the condition and outlook of the specific industry in particular
- The book value of the stock and the financial condition of the business
- The earning capacity of the company
- The dividend-paying capacity
- Whether the enterprise has goodwill or other intangible value
- Sales of the stock and the size of the block of stock to be valued
- The market price of the stock of corporations engaged in the same or a similar line of business, having their stock actively traded in a free and open market, either on an exchange or over-the-counter

Revenue Ruling 59-60 is a foundational ruling for valuations of closely held businesses for tax purposes. Through later rulings its application was expanded to valuation of entities other than corporations, such as partnerships. Valuations prepared for tax purposes should fully address the factors listed in the ruling. These factors are critical for consideration, but the ruling acknowledges that common sense, reasonableness, and informed judgment will be an important part of the process. Since the likely reader of this report will include representatives of the Internal Revenue Service, the analyst has clearly indicated that the points they expect to see are addressed.

Sources of Information

This engagement involved an analysis of Acme's recent financial performance and its prospects in the market in which it operates. In the course of developing our findings, our work included the following:

- An on-site visit to Acme's headquarters in Denver, Colorado
- Interviews with the following:
  - Company management (which included Mr. John J. Acme Jr., the executive vice president, and Mr. Bobby Jones, the head of the engineering department) on the issues related to the Company's current and future strategy, operations, customers and competitors, and the industry environment
  - Company personnel (Mr. Rich Moss, the production manager), on topics related to the Company operations
  - The Company controller and treasurer (Mr. H. Hal Burns, CPA, controller, and treasurer of the Company) on issues related to financial analysis
- Analysis of the audited financial statements[1]

[1] Source: Audited statements by Smith & Smith, CPAs for years ended December 31, 1995 through 1999.

- Analysis of other relevant Company documents and outside research. We also obtained and reviewed the December 31, 1990, valuation report of the Company dated March 15, 1991, prepared by Mr. Mark Jones, Jr. of Valuation Nation, Inc.
- Research on the overall economic outlook and the specific factors pertinent to the measurement devices and construction industries, which impact Acme
- Analysis of the current and future earnings capacity of Acme

Financial and other pertinent information provided has been accepted without further verification. See Appendix B for a complete list of the assumptions and limiting conditions to which this appraisal is subject and Appendix E for a list of other sources consulted.

Major sources of information should be identified, appropriate to the purpose of the assignment. Notice that the analyst is assigning responsibility to others for the accuracy of the information on which she is relying. The analyst is not acting as an auditor. This assignment of responsibility for the data is an important disclosure to the reader. Additionally, at the end of the valuation engagement, the analyst may ask for a "representation letter" signed by management or other responsible parties, in which they acknowledge to the best of their knowledge that the information they have provided is true and complete.

Background

Company Profile/History

Acme is a manufacturer of measurement devices for assessing the physical properties of engineering materials. It began operations in 1965 and was incorporated in the state of Colorado on January 10, 1965. The Company is a C corporation, and is currently located at 1800 Cowboy Way, in Denver, Colorado.

Acme's current product offerings include testing gauges and related equipment incidental to the use of its gauges. Acme provides full-service training and maintenance support for its product line through sales and service offices in the United States, Canada, and through over 20 distributors around the world. The Company's primary customers are companies (contractors) operating in the construction industry.

The following points document some important milestones in Acme's history:

1965: Acme was founded by Mr. John J. Acme.

1966: Mr. Acme began designing and building specialized testing equipment.

1967: Mr. Acme's efforts led to the application of cutting-edge technology to testing and measuring instruments.

1972: The launch of its main product, the 5000 Series model. Exports account for approximately 7 percent of total revenue.

1978: Acme moved its location to Denver where it operates today. The Company employed approximately 50 individuals.

1986 and 1995: Acme expanded its facilities.

1996: Model 5500 XP Compactor Machine is introduced.

1997: The Acme Model 3500 Moisture Marker and Model 9800 XYZ Oven were introduced.

1998: Model 6750, the Acme XP Compactor Machine was introduced. The Company employs approximately 185 individuals.

1998: In December, the Board of Directors approved the building of a 40,000-square foot Research and Development Center.

2000: In January, the New Hot Oven was presented to board members. The Company employs approximately 150 individuals.

Ownership

As of the Valuation Date, the Company's capital stock consisted of 124,684 shares of $1.50 par value common stock issued and outstanding.

After its incorporation in 1965, Mr. Acme raised funds by selling stock to family and associates to help finance the expected growth of the business. Over time, the initial shareholders made gifts of stock in Acme to their heirs; therefore, the actual number of shareholders increased continuously.

As of the Valuation Date, the Company had 102 shareholders. As per management, the relationship of Acme's stockholders was excellent. Various members of the Acme family hold the largest amounts of Company stock.

Exhibit 9.1, "Ownership—Ranking by Voting Power" shows the five main shareholders (in terms of number of shares held) of the Company as of the Valuation Date, ranked by the voting power held by each.

Exhibit 9.1 Ownership—Ranking by Voting Power

Name	Total Shares Owned	% of Total Shares Outstanding
John J. Acme	16,279	13.1%
Leigh Beasley	10,562	8.5%
John J. Acme, Jr.	9,184	7.4%
Rhonda Acme-Williams	9,184	7.4%
Chris E. Acme	9,184	7.4%

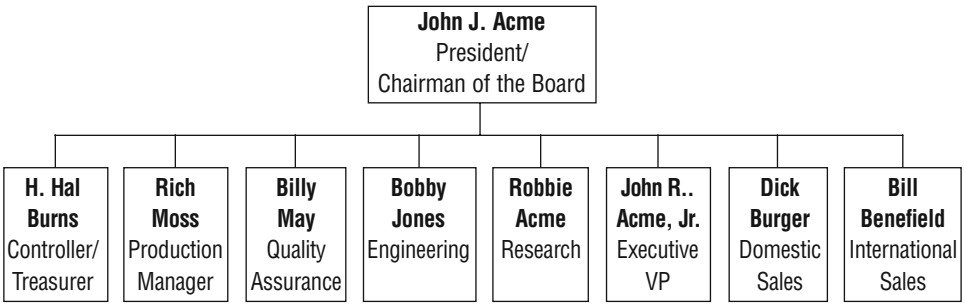
Management/Personnel

The general employee relations are considered good. There is an approximate annual turnover rate at Acme of 30 percent. This percentage in turnover is due to the fact that the work availability in Denver is high.

As of the Valuation Date, the Company had a total of approximately 150 nonunion employees. Acme has employment agreements with its key employees that limit their ability to work for a competitor in a specified geographical area for a certain time.

The Company's key employees and their functions are shown in Exhibit 9.2, "Organizational Structure." From their background description, it can be seen that the Company has a balanced management team comprised of individuals with extensive experience in the measuring devices industry.

Exhibit 9.2 Organizational Structure



A short description of some of the key personnel follows:

John J. Acme. President of the Company and Chairman of the Board, founded Acme in 1965. Prior to that, Mr. Acme started out in the radio repair business, and later began developing testing equipment for the public and private sectors. In 1960, Mr. Acme began designing and building specialized testing equipment for clients including GE and NASA.

John J. Acme, Jr. Executive Vice President, has a B.A. degree from Colorado State University and an M.B.A. degree from the University of Colorado. His work experience began at Acme in 1978 as Sales Manager, continuing in 1981 as a Manager of Central American Sales. He has been the Executive Vice President of the Company since 1988.

H. Hal Burns, Jr., CPA. Controller and Treasurer of the Company, has a B.A. degree in Accounting from Wheaton College. His work experience includes employment with Big Eight, Ltd. from 1967 to 1984. Since 1986, Hal has been with Acme.

Bobby Jones. Head of the Engineering Department, has a Masters and a Ph.D. in Civil Engineering from the Colorado State University. Bobby has been with the company since 1987.

Rich Moss. Production Manager, has a B.S. degree in Business Administration from Central Wyoming University. Prior to coming to Acme, Rich was a Materials Manager with Big Sky Electric.

Bill Benefield. International Sales and Product Services Manager, obtained a B.A. from East Montana State University in 1962. He has been with Acme since 1975.

The table in Exhibit 9.3, "Company Officers and Directors," shows the officers and directors of the Company, and the compensation for the officers for the year 1999.

Exhibit 9.3 Company Officers and Directors

Company's Officers and 1999 Compensation		Company's Directors
John J. Acme, President	$425,000	John J. Acme, Chairman of the Board
John J. Acme, Jr., Executive VP	$225,000	Rhonda Acme-Williams
C. Page Turner, Secretary	$ 10,000	Richard L. Hobbs
H. Hal Burns , Jr., Treasurer	$100,000	John J. Acme, Jr.
		Thomas York

Products

The products manufactured by Acme are used primarily in the construction industry. They are principally used to measure the moisture and density of certain construction materials, density of asphalt layers, and as quality control equipment in asphalt mix design.

Functionally, the Company products are designed for the following applications:

- *XP Compactor Machines*. Company's products in this area of business include Model 6750 designed for use in field labs and the Model 5500 XP Compactor Machine. These models produce a profile that is used by the designer to determine optimum aggregate mixtures.
- *Ignition Ovens*. Include the Acme New Hot Oven ("NHO"). The NHO combines advanced infrared technology to measure asphalt content. This produces a very clean and efficient burning of aggregate materials while limiting the aggregate degradation.
- *Moisture/Density Gauges*. Acme is a leader in the industry with its products for these applications to measure the density of aggregate construction materials.

Gauges comprise the highest percentage of revenue, with approximately 48 percent of total revenues in 1999. The compactors generated approximately 25 percent of total revenues in 1999.

The Company has been very active in research and development. In 1999 the Board of Directors approved the plan to build an advanced technology center (the Research and Development Center), which would be used for development of new products for the Company's industry. Historically, the Company spent approximately $2.8 million and $2.7 million on research and development costs in 1998 and 1999, respectively, which is approximately 10 percent of total revenues.

Company Operations/Business Risks

The Company faces a number of risks due to the nature of the technology employed. Most of the equipment manufactured by Acme utilizes a source material that emits radiation into a sample. The major product risk is related to this feature.

One risk is that of disposal of used or depleted source materials. The Company is required to track each of the sources it sells, and, when these sources are depleted, they must be returned to Acme for disposal. That places Acme in an undesirable situation, especially since there are currently no federally approved long-term nuclear waste disposal sites in the United States.

Another risk with this technology is that of public/client perception of the risks associated with the radioactive materials. Clients are required to receive training regarding the use of these instruments and must make strides to track all of their instrumentation.

Locations Maintained by the Company

The map in Exhibit 9.4, "Acme Sales and Service Offices in the United States," shows the locations maintained by the Company and the primary activity of each location. As shown, in the United States, the Company's headquarters and its only manufacturing facility are located in Denver, Colorado.

The Company's branches are in Dallas, Texas (the Southwestern Branch), Chicago, Illinois (the Midwestern Branch), and Sacramento, California (the Western Branch). These branches provide both sales and service of Acme equipment. All the other locations are either sales or service centers. The most recent customer service

Exhibit 9.4 Acme Sales and Service Offices in the United States

center was opened in April 2000 in Tampa, Florida. Per Company management, in the event of an increasing population of gauges, other service centers may be opened in the future.

Besides the U.S. operations, the Company has international sales and service centers in Canada and Germany. The sales and service office in Canada is located in Toronto, Ontario, and the one in Germany is located in Berlin.

The Company has developed relationships with distributors all over the world. As of the Valuation Date, the Company had approximately 20 international distributors. Acme has long-term relationships with several of its distributors. The Company is continually seeking other distributors in different parts of the world.

Facilities and Space Availability/Equipment

Acme leases its headquarter facilities from Acme Owners, Ltd., which is a corporation owned by members of the president's family. The lease has an original term of 18 years, with the lease expiring October 31, 2006. The lease agreement states that the parties to the lease shall renegotiate the amount of rent every five years.

The Seventh Lease Agreement mentions the following:

> Landlord and Tenant have studied available data on prevailing rates for commercial real estate space in Denver, and have determined that a blended rate of $15.33 per square foot for space in the building covered by the Lease is somewhat below average in the Area, and is reasonable and fair. The building contains 90,000 square feet on the first or main floor and 35,000 square feet in the lower or ground floor.

Lease payments for the years ended December 31, 1999 and 1998 were $1,540,000 and $1,490,300, respectively. Real estate appraisals on the Company property were not available to determine whether the rent paid approximated market rental rates, but this rate is, based on representation from management, in accordance with market rents appropriate for Denver.

At present, the work schedule at Acme is comprised of one shift. If sales grow, labor is believed to be available to add a partial second shift. One constraint that Acme faces is the floor space availability. Currently, based on demand for its products, Acme could reach a maximum capacity of production of approximately $31 million in sales. If orders increase over this amount, the Company will have to search for additional floor space for its production facility.

The Company's machinery and equipment are in very good condition. The approximate yearly capital expenditures for machinery and equipment for the past five years are shown in Exhibit 9.5.

Exhibit 9.5 Annual Capital Expenditures

1995	1996	1997	1998	1999
$809,238	$818,096	$1,036,950	$875,750	$553,260

Company management intends to spend approximately $855,000 in 2001 on capital expenditures.

Marketing and Advertising

Acme does not have a marketing department. The Company's annual budget for advertising is between $95,000 and $125,000 and is spent on participation at trade shows, direct sales calls and visits to prospective clients.

Customers

Sales to the Company's top 10 customers ranked based on revenues generated, for the years 1995 through 1999, are presented in Exhibit 9.6, "Top Ten Customers."

Exhibit 9.6 Top Ten Customers

Company	1995	1996	1997	1998	1999
Twin Pines	$ 796,436	$ 447,582	$ 387,947	$ 442,361	$ 507,794
RE Materials	542,523	437,838	374,621	407,190	485,607
Hood	473,597	377,019	370,827	355,863	396,966
James & Co.	411,120	358,622	358,418	348,563	396,090
Tim Corp.	391,011	343,386	344,288	340,721	388,371
Martha, Inc.	345,882	329,336	335,234	339,837	381,296
Marathon, Inc.	342,249	324,111	301,781	326,517	366,165
Bama Boys Corp.	299,471	296,274	292,278	324,840	277,200
Rooster, Inc.	297,422	253,295	284,468	309,729	254,345
Stewart, Inc.	297,333	251,450	258,911	277,706	238,008
Total	$4,197,044	$3,418,913	$3,308,773	$3,473,327	$3,691,842

As can be seen in the table, the Company has established long-term relationships with its customers. For instance, Twin Pines has been a client of the Company for more than 25 years; RE Materials, James & Co., and Tim Corp. have been clients for over 20 years. Some are one-time clients, though, as is likely to be the case of Z Corp, a Nevada company, which accounted for approximately $150,000 in revenues in 1999. The contractor declared bankruptcy in 2000.

A short description of some of the Company's main customers in 1999 follows:

- Twin Pines operates in waste management services, and is a provider of environmental analysis and consulting services.
- RE Materials operates as a paving contractor in the construction services industry.
- James & Co. is part of the RaRa Corporation, one of the Southwest's largest suppliers of construction materials. RaRa provides the construction industry with a full range of aggregate products.
- Tim Corp. is an engineering services company.

The Company does not have exclusive contracts with its customers. The only exclusive contracts Acme has entered into are with some of its international distributors.

Competitors

Some of the Company's main competitors, per management, include the following companies:

- Big Instrument Company (Big) is a manufacturer of structural material testing equipment and research test equipment. Big is a provider of microprocessor-based industrial control system engineering, design and manufacturing services for OEMs.
- Thermogo, Inc. (Thermogo) is a manufacturer of industrial ovens. Equipment produced includes bench-top ovens, incubators, power outlets, strip chart recorders, digital hot plates, stirrers, hot plates, shakers, mixers, and thermal cycles.
- Hubert Electronics Company (Hubert) is one of the nation's leading manufacturers of testing equipment for asphalt, concrete, and soil. It competes with Acme in several markets.
- Pave the World International, Inc. (PAVE) is a provider of field moisture content measurements for soils, asphalt, and concrete. It competes with Acme in the moisture device market. In the past, PAVE and Big have been very aggressive in their marketing and pricing.

Exhibit 9.7 Acme versus the Competition—Acme Measurement Devices, Inc.

Product type	Weaknesses	Strengths
Compactor Machines	Big bought the third-ranked XP Compactor Machine manufacturer and has initiated an aggressively negative campaign about Acme's products.	Acme is responding to the negative campaign in a professional manner. Acme has excellent quality products, which are offered at competitive prices. Acme increased its service staffing and reduced its lead time to one to two weeks for delivery.
Ignition Ovens	Thermogo ignition oven is the leader in the current market.	The New Hot Oven has significant advantages over competition. It is new technology; it is relatively lightweight; it's offered in two models with different power options; and the price is competitive.
Moisture/Density Gauges	Competitors in the marketplace have improved their products, making them more comparable with Acme.	Acme is an innovator in gauge technology. There is a noticeable brand loyalty among consumers relative to Acme products.

- Bigger Systems, Inc. (Bigger) provides nonnuclear measurement of material density that eliminates for the customer the added cost or need for a certified nuclear technician. The product provided by Bigger has a definite appeal to the market, but the results of its measurements are questionable.

An analysis of the strengths and weaknesses of Acme relative to its competitors is provided in the table in Exhibit 9.7, "Acme versus the Competition."

Key Person[2]

This valuation report came as a result of sudden retirement of the Company's founder, president, and chairman of the board, Mr. John J. Acme. In early May 2000, he was diagnosed with a terminal illness. His stock was gifted to his children on May 31, 2000. Mr. Acme had been actively involved in the day-to-day operations of the Company since its inception. He contributed to Company growth with his strategic judgment and long-standing contacts within the industry.

Although past normal retirement age, Mr. Acme continued to work daily until the day before his unexpected retirement. As a result, a succession plan was never put in place, and Mr. Acme made all significant management decisions until the last day he was in the office.

Mr. Acme was covered by a minimum key person life insurance policy, in the face amount of approximately $200,000, for which the Company was the beneficiary.

In adjusting for risk factors specific to Acme in Exhibit 9.18, we incorporated the estimated effect of the loss of the Company's president.

As of the Valuation Date, it was expected that Mr. Acme, Jr., would succeed Mr. Acme as president and chairman of the board of the Company.

Summary of Background Information

- The Company has a balanced management team composed of individuals with extensive experience.
- Besides its manufacturing facility and headquarters in Colorado, the Company has three other branches, three sales offices, and three service centers in the United States.
- The products manufactured by Acme are used primarily in the construction industry. The Company is the industry leader in materials testing gauges.
- The Company has established long-term relationships with several of its customers.
- The Company has been very active in research and development.
- Acme increased its service staffing, and reduced its lead time to one to two weeks for delivery.
- The New Hot Oven introduced on the market in March 2000 is a promising product; it is relatively lightweight; it is offered in two models with different power options; and the price is competitive.
- The constraints that Acme faces are those of floor space. Currently Acme has a maximum capacity of production of approximately $31 million in sales.

[2] An example of a catastrophic loss of key executives was the tragic death of most of the top management of Arrow Electronics in a hotel fire in December 1980. Arrow's New York Stock Exchange–listed common stock fell approximately 20 percent after the announcement of the news. Source: *The Wall Street Journal*.

- The Company faces a number of risks due to the nature of the technology employed. The major risk is that of the nuclear source material, which entails a number of component risks.
- The Company is encountering many sales situations whereby a client will not buy a gauge from Acme unless it disposes of the source materials from its old gauges.
- Under current circumstances, Acme must dispose the nuclear waste. At present in the United States there are no federally approved, long-term nuclear waste disposal sites.
- Mr. Acme was a key person in the business and kept tight control over all operations. A succession plan was never put in place, and Mr. Acme made all management decisions until the last day he was in the office.

To value the future, one must look at the past. This section of the report provides important information on the history of the business, major events, ownership, key personnel, products, marketing, customers and competitors, suppliers, and other critical factors. What has brought the Company to where it is today? Was it innovative products or excellent management? Great products can cover bad management, but only in the short term. What key risks does the company face in its market area? More important, can it continue to do in the future what it has done in the past? The level of disclosure here can be brief or lengthy, depending on circumstances and the nature of the assignment.

This section should leave the reader informed of the critical factors viewed by the analyst. After an extensive narrative, the reader is provided a bullet-point summary of what was been presented.

Industry Analysis

Acme is a manufacturer of nuclear and electronic instruments for measurement of the physical properties of construction materials. Due to the nature of the operations of Acme, we researched the Measuring and Controlling Instruments industry—which is an integral part of the Industrial and Analytical Instruments Industry—classified by the 1987 Standard Industrial Classification (SIC) manual under SIC 3829.

Since the primary source of clients for Acme products are companies operating in the highway construction industry, we researched this industry as well, which is classified under SIC 1611.

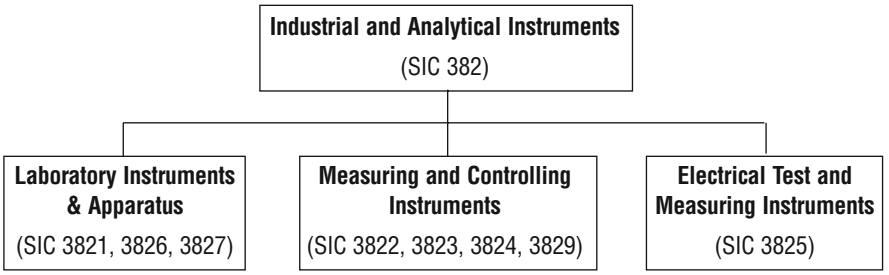
Description of the Industrial and Analytical Instruments Industry[3]

As can be seen in the table in Exhibit 9.8, "Industry Segmentation," the Industrial and Analytical Instruments industry encompasses three major sectors: laboratory instruments and apparatus, measuring and controlling instruments, and electrical

[3] Source: *U.S. Industry & Trade Outlook 2000,* Chapter 23, pp. 1–8.

test and measuring instruments. Of the three segments shown below, we will focus our analysis only on the Measuring and Controlling Instruments Industry.

Exhibit 9.8 Industry Segmentation



Measuring and Controlling Instruments Industry[4]

The industry main product segments include aircraft engine instruments (14 percent of industry sales in the late 1990s), nuclear radiation detection devices (13 percent), geophysical and meteorological equipment (32 percent), and physical properties testing and inspection equipment (27 percent).

The industry was fragmented in comparison to other U.S. manufacturing sectors with an estimated 908 companies competing in the late 1990s. The average industry participant employed 38 workers in 1994, compared to 49 for all other U.S. manufacturing firms.

Many of the products manufactured in this industry contain microprocessors that improve the speed, measurement, and process control of these instruments and systems. A recent development is the trend toward integrated products and systems. The enormous impact of personal computers (PCs), computer software, and digital technology is revolutionizing the measuring and controlling industry. The control function is moving rapidly to PC-level systems. The increased use of "intelligent" products is allowing the end user—a manufacturing facility or power plant—to predict problems in advance of costly failures. U.S. companies must continue to invest in key growth technologies such as electronics and software to remain competitive in today's increasingly complex environment.

The keys to growth in today's global marketplace include acceleration of new product introductions and the globalization of the instrument business. Acquisitions, joint ventures, and strategic alliances are critical to American companies that wish to remain competitive in the global marketplace.

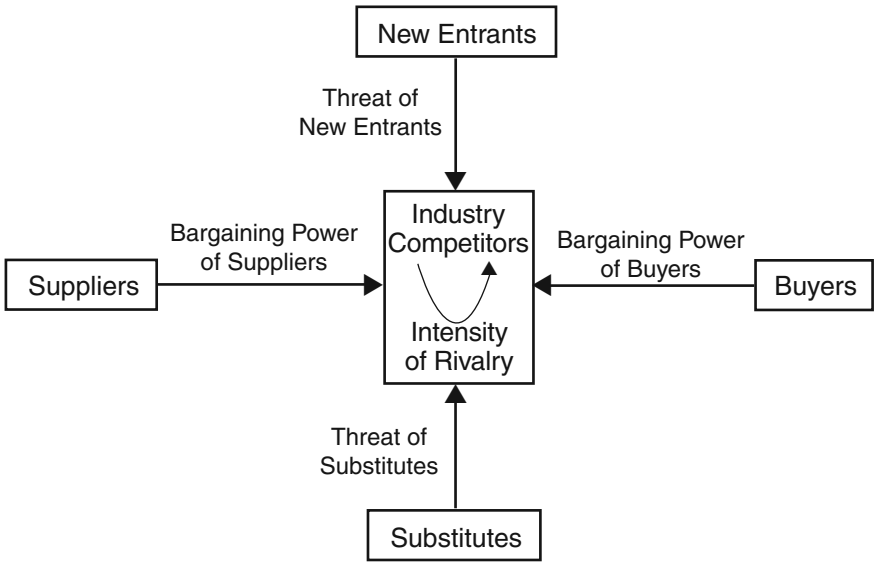
Nuclear Radiation Detection and Measurement Devices Industry

We employed Porter's[5] model of analysis as shown in Exhibit 9.9, "Industry Analysis—A Classical Approach," to examine more closely the nuclear radiation

[4] *Ibid.*

[5] Michael E. Porter, *Competitive Strategy: Techniques for Analyzing Industries and Competitors* (New York: The Free Press, 1998).

Exhibit 9.9 Industry Analysis—A Classical Approach



detection and measurement devices industry defined by SIC 3829 which is an integral part of the Measuring and Controlling Instruments Industry described in the previous paragraph. For this analysis we relied on sources provided by the management of Acme.

In the following paragraphs we will analyze each of the characteristics that define this industry:

- *Industry Competitors.* As mentioned in the Company Profile section of this report, competition is strong. One competitor has initiated an aggressive negative campaign about Acme's products.
- *Substitutes.* It is believed that the first company to develop a reliable and accurate product that will be capable of doing all the measurements without using radioactive isotopes will be in a significant position to capture the majority of the business in this industry. The current market trend is toward acceptance of less than reliable measurement equipment as long as it does not contain nuclear radiation materials. One competitor has developed a nonnuclear device, but the results measured are questionable. The research and development (R&D) expenditures are fairly high in the industry, between 7 and 15 percent of total revenues.
- *Buyers.* Most buyers of materials testing equipment are construction companies operating as general contractors. These contractors usually obtain their work through a bidding process that is fairly competitive; therefore, they must keep costs at a minimum. As a result, these buyers are price sensitive and tough to negotiate with. Also, the manufacturers are encountering many sales situations whereby a customer will not buy a gauge from the producer unless it disposes of the source materials from the customer's old gauges. This adds an extra cost to the manufacturer (which, due to the price sensitivity of its

buyers, cannot be passed on to its customer) to dispose of the radioactive materials.

- *Suppliers*. There are very few companies in the market that supply radioactive sources; therefore, the bargaining power of suppliers is fairly high. Historically, the suppliers of radioactive materials would handle the aged products with used nuclear sources. At present, the suppliers are no longer accepting the return of these sources. Therefore, the manufacturer is put in the unenviable position of handling this nuclear waste. Currently in the United States, there are no federally approved, long-term nuclear waste disposal sites.
- *New Entrants*. Based on an analysis of this industry, the barriers to enter the market are high. A manufacturing company that decides to enter this industry must obtain and maintain specific licenses to store, use, and transport radioactive materials and must have adequate capital necessary for R&D expenditures.
- *Government Regulations*. The companies that manufacture or purchase products that contain radioactive materials must have a current radioactive materials license. Companies are required to comply with the Nuclear Regulatory Commission (NRC), State, and Department of Transportation (DOT) sets of laws.
- *Future Trends*. An examination of articles discussing the subject of nuclear waste disposal reveals that there will probably be no operational nuclear waste disposal facilities in the United States for another 15 to 20 years. The result of this is that Acme now finds itself in the business of interim nuclear disposal for its clients, which requires the Company to divert its energies from research and development, manufacturing, and marketing of its instruments to the construction and maintenance of nuclear storage and compliance with nuclear regulations.

Industry and Trade Projections[6]

Shipments by the U.S. Measuring and Controlling Instruments Industry in 1998 rose an estimated 3 percent over 1997, reaching $20.1 billion in constant dollars. The value of U.S. Measuring and Controlling Instruments Industry shipments was estimated to reach $20.7 billion in 1999, an increase of 3 percent.

U.S. industry shipments of measuring and controlling instruments are forecast to grow 3 percent to $21.2 billion in 2000.

During the five-year period ending in 2004, analysts project an annual compound growth rate of 4 percent, with total U.S. industry shipments of measuring and controlling instruments reaching $24.1 billion.

Information from Integra Corporation shows a 4.4 percent industry growth (SIC #3829) after 1999.

[6] *U.S. Industry & Trade Outlook 2000.*

Construction Industry Overview

Due to the nature of the operations of Acme, since its primary source of clients are companies operating in the construction industry, we also researched this industry, which is classified under SIC 1611.

Results of the 1999 Construction Industry Annual Financial Survey[7]

The Economy and Competition section of the 1999 Construction Industry Annual Financial Survey indicated that the respondents to the survey were fairly optimistic regarding anticipated growth in next year's volume of contract revenue. The respondents to the 1999 survey were approximately 710 general members of the Construction Financial Management Association (i.e., contractors operating in various niches of the construction industry). The respondents projected the Heavy & Highway category with the highest growth in next year's volume.

The survey asked respondents to select from a list the three most challenging areas facing the construction industry during the next five years. Consistent with 1998, respondents selected shortage of trained help as the top challenge facing the construction industry in the future. Sources of future work and shortage of trained project managers were ranked second and third.

U.S. Construction Industry[8]

In 1999, the inflation-adjusted value of new construction put in place increased 4 percent to set an all-time record. (The 1999 current dollar value of about $700 billion is also an all-time record.)

This performance was partly the result of a small increase in the number of housing starts to 1.66 million units. Public works construction increased 5 percent, led by increases in school and road construction.

The value of new construction put in place as a percentage of gross domestic product (GDP) (about 7.8 percent in 1999) has risen slightly in recent years but is well below the post-World War II peak of 11.9 percent attained in 1966. This measure tends to understate the importance of construction in the economy because several types of construction activity that are not included in new construction data have grown rapidly in the last decade, including maintenance and repair, some commercial and industrial renovation, factory-built structures, and environmental restoration.

There were an estimated 6.3 million employees in the construction industry in 1999, about the same as the 1998 level, which was an all-time record. In addition, about 1.6 million people are self-employed in construction as proprietors and working partners, so the total number of persons employed in the industry is about 7.9 million. Construction is one of the higher-paying industries in the United States as measured by average hourly and weekly earnings.

Outlook for 2000

The constant dollar value of new construction in the year 2000 is expected to increase slightly from the 1999 level to set another record. Home building will lag behind nonresidential construction. The most promising markets are commercial

[7] Source: The 1999 Construction Financial Management Association (CFMA) survey.
[8] Source: *U.S. Industry & Trade Outlook 2000*.

buildings, educational buildings, highways, and electric utilities. The weaker construction markets will be factories, military facilities, and single-family homes.

Private, nonresidential construction will be about 2 percent higher than in 1999, with declines in factory construction offset by gains in other categories. Public works construction is expected to increase in 2000 as a result of increases in federal, state, and local construction expenditures.

Outlook to 2004

Between 2000 and 2004, new construction is expected to increase modestly from current levels. The overall real (excluding inflation) growth rate for construction will be about 1 percent annually, compared with 2 percent for the GDP. Public works construction is expected to increase faster than is private nonresidential construction. Remodeling and repair construction is expected to increase at about the same rate as the GDP.

A key factor supporting construction during the next five years will be stable or even declining interest rates after the year 2000. This forecast assumes a very small federal deficit and modest inflation rates, which should lead to lower interest rates and a fairly good macroeconomic climate for construction.

Transportation Infrastructure

New road and bridge construction, which was at a record level in 1999, is expected to set another record in the year 2000. Expenditures for highway maintenance and repair have increased and will continue to set records as well.

About 25 percent of the value of highway construction put in place consists of bridges, overpasses, and tunnels; flatwork (primarily roads) accounts for the remaining 75 percent. Bridgework is expected to grow faster than flatwork during the next several years because of the need to replace obsolete or unsafe bridges with new bridges for the twenty-first century. According to the Federal Highway Administration's latest estimate, 23 percent of the highway bridges in the United States are structurally deficient and an additional 21 percent are functionally or structurally obsolete.

Highway maintenance and repair expenditures have grown during the last two decades as the road network has become larger and older. In 1999, the current dollar cost of highway maintenance and repair was about $31 billion, compared with $50 billion in new highway construction put in place. While some of this work consists of routine maintenance such as mowing grass, much of it is typical construction activity such as repaving roads and painting bridges. Highway maintenance and repair expenditures probably will grow more rapidly than will new construction over the next decade.

Mass transit construction was expected to decline slightly in 1999, despite the increase in new federal budget authority because of lags in the spending process. However, after 2000, mass transit construction is expected to increase sharply because of increasing federal financial support. The outlook for mass transit construction is heavily dependent on the types of funding available. Of the $235 billion in federal financial support authorized from 1998 through 2004, $35 billion was earmarked for mass transit projects. In addition, a large share of the remaining funds can be diverted from highways to mass transit because of concern about air pollution and local development policies.

Summary of Industry Analysis

- Based on our research, there will probably be no operational nuclear waste disposal facilities in the United States for another 15 to 20 years.
- Companies operating in the nuclear radiation detection and measurement devices are required to comply with applicable Nuclear Regulatory Commission (NRC), State, and Department of Transportation (DOT) regulations.
- It is believed that the first company to develop a reliable and accurate product which will be capable of doing all the measurements without using radioactive isotopes will be in a significant position to capture the majority of the business in this industry.
- During the five-year period ending in 2004, analysts project an annual compound growth rate of 4 percent, with total U.S. industry shipments of measuring and controlling instruments reaching $24.1 billion.
- The manufacturing companies operating in the measuring and controlling devices industry find themselves in a difficult environment, being squeezed by the bargaining power of their buyers and suppliers, and also being concerned with the immediate loss of market share in the event of a discovery of substitute products that are not using radioactive materials.
- The Economy and Competition section of the 1999 Construction Industry annual financial survey indicated that respondents to the survey were fairly optimistic regarding anticipated growth in next year's volume of contract revenues.
- The respondents of the 1999 CFMA survey project the heavy and highway category to have the highest growth in next year's volume.

As a result of all the factors described above, Acme finds itself in a difficult environment, being squeezed by the bargaining power of its buyers and suppliers, as well as being concerned with the immediate loss of market share in the event of a breakthrough discovery of a substitute product that does not use radioactive materials. We took this into account when determining the capitalization rate in Exhibit 9.18, as well as in determining a normalized level of revenues in Exhibit 9.17.

This entity manufactures highly specialized products. With such a narrow focus, the analyst believed that he or she should not only look at the production side of the industry but also see the industry status of the users of the products. Doing this often requires that more than one SIC (or NAICS) be reviewed. Often this industry analysis is presented in the back of a valuation report as an appendix. That approach is acceptable, but what often results is a "disconnect" between the industry information and its application to the subject company. Here the analyst has presented the industry information early in the report and woven it together with company information. If the analyst places the information in an appendix, care should be taken to explain its impact on the valuation process presented earlier in the report.

General Economic Overview[9]—United States

According to preliminary estimates released by the Department of Commerce's Bureau of Economic Analysis, real Gross Domestic Product (GDP), the output of goods and services produced by labor and property located in the United States, increased at an annualized rate of 5.4 percent during the first quarter of 2000. Growth in GDP for the fourth quarter of 1999 was revised to 7.3 percent, significantly higher than the preliminary estimated annualized growth rate of 5.8 percent. Increases in personal consumption expenditures, nonresidential fixed investment, and state and local government spending were major contributors to the increase in GDP. Contributing to a deceleration from 1999 fourth-quarter results were declines in inventory investment, imports, and defense spending. Annual growth in GDP for 1999 was 4.2 percent, modestly lower than the 4.3 percent growth rate reported for 1998. Despite the previous and expected forthcoming actions of the Federal Reserve to quell the rate of economic growth, the U.S. economy is expected to continue expanding with GDP growth of approximately 4.0 percent in the second quarter before slowing to sub-3.0 percent levels for the balance of the year.

The Composite Index of Leading Economic Indicators, the government's primary forecasting gauge, increased 0.1 percent in March after rising 0.2 percent in January and decreasing 0.3 percent in February. The index attempts to gauge economic activity six to nine months in advance. Multiple consecutive moves in the same direction are said to be indicative of the general direction of the economy. In March, five of the 10 leading economic indicators rose. The most significant increases were average weekly claims for unemployment insurance, manufacturers' new orders of consumer goods and materials, and stock prices. During the six-month span through March, the leading index rose 0.7 percent and seven of the 10 components advanced. According to the Conference Board's report, "the leading indicators point to a continuation [but decelerating rate] of the [economic] expansion during 2000."

The Dow finished the quarter 5.0 percent lower than year-end 1999, while the S&P increased a modest 2.0 percent and the NASDAQ increased 12.4 percent during first quarter 2000. The Federal Reserve (the Fed) increased the federal funds rate in early February and again in late March. The Fed is attempting to cool the robust economic engine before it produces excessive inflationary pressure. Additional rate tightening is expected through mid-2000. Short- and intermediate-term bonds yields generally increased reflecting Fed rate hikes, while long-term yields generally declined during the quarter.

The CPI rose 2.7 percent during 1999, reflecting generally low core price growth but high growth in energy prices. Tight labor markets and strong economic activity appear to be accelerating inflationary pressures thus far in 2000. Productivity enhancements are credited with mitigating inflationary pressures; however, the lagging impact of high fuel prices has affected consumer prices with the CPI increasing in February and March. The inflation rate is expected to continue at approximately 2.5 percent to 3.0 percent in the first half of the year.

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[9] Source: The National Economic Review, First Quarter, 2000, Mercer Capital (used with permission).

Consumer Spending and Inflation

The seasonally adjusted annual rate of inflation for the first quarter of 2000 was 5.8 percent, compared to 2.9 percent, 4.2 percent, and 2.2 percent, respectively, for the second through fourth quarters of 1999. The rate of inflation for 1999 was 2.7 percent, higher than the 1.6 percent rate of 1998. Total retail sales for the first quarter of 2000 were 10.5 percent higher than the same quarter a year ago.

Interest Rates

The Federal Reserve's Open Markets Committee raised interest rates by a quarter of a percentage point at the February 2 meeting and again at the March 21 meeting.

Financial Markets

The Dow Jones Industrial Average (DJIA) closed the first quarter at 10921.92, a decrease of 5.0 percent for the quarter and for the year. The Standard and Poor's 500 Composite Index gained 2.0 percent during the first quarter to close at 1498.58. The NASDAQ Composite Index increased 12.4 percent during the first quarter to close at 4572.83 after a record-setting 85.6 percent gain during 1999. Short-term bond prices fell in concert with the Fed's interest rate hikes while long-term yields were generally favorable due largely to a flight by investors to more secure capital given weakness and/or volatility in the stock market.

Construction, Housing, and Real Estate

According to the U.S. Commerce Department's Bureau of the Census, new privately owned housing starts decreased to a seasonally annualized rate of 1.604 million units in March, or about 11.0 percent below the revised February level of 1.807 million units. In the first three months of 2000, housing starts have decreased 2.0 percent from 1999 totals. Building permits are down 3.0 percent.

Unemployment

According to the Labor Department's Bureau of Labor Statistics, unemployment levels during the first quarter of 2000 remained historically low. The unemployment rate for February and March was 4.1 percent, slightly above the January rate of 4.0 percent. March marked the thirty-third consecutive month that the unemployment rate was below 5 percent. The approximate unemployment rate average for 1999 was 4.2 percent, lower than 4.5 percent for 1998.

Economic Summary and Outlook

Due to the nature of operations, state and local economic factors are less important than those at the national level.

- Economic (GDP) growth in the first quarter of 2000 was 5.4 percent, down from a revised 7.3 percent in the fourth quarter of 1999.
- Economic growth is expected to moderate somewhat from recent levels, but should remain historically favorable at 3 to 4 percent.
- Inflation is expected to remain relatively mild at below 3 percent.
- Increasing fuel prices could threaten future price stability.

As can be seen in Exhibit 9.18, we approximated Acme's annual nominal growth rate with 3 percent, which is equal to the estimated inflation as predicted in the National Economic Review. The effect on the Company's value of the above economic analysis would impact primarily from the choice of a rate of growth. The effects of the above summary and outlook will be used in the development of a capitalization rate as shown in the Income Capitalization Method.

As with the industry analysis, analysts often place the economic review in the appendixes. Here it also was presented earlier in the report. Why does the report focus on national economic issues rather than state and local conditions? From the background information, we recall that this company has locations all across the country and distributes nationally and internationally. How relevant would an extensive discussion of the local economy surrounding the home office be in this case? Carefully focus on the major economic factors affecting the company as a whole and provide your assessment of their impact on the company.

Financial Statement Analysis

Financial Statements Utilized

The Company financial statements utilized in this valuation report are the audited annual and internally prepared interim balance sheets, income statements, and statements of cash flows for the years ended December 31, 1995, through the last 12 months (LTM) ending May 31, 2000. The financial data of Acme is presented in Exhibits 9.13, 9.14, and 9.15.

Valuation in all cases is a forward-looking concept. So why are we focusing on the past? The past is often the best indicator of future expectations (Revenue Ruling 59-60). The relevant historical period to be analyzed must, however, be identified. Often it is five years (RR 59-60 again), but it could be longer or shorter. The prior discussions of the history and nature of the business and the status of the industry and of the economy provide information for determining the relevance of the period chosen for review. In this case, over five years are presented. The relative significance of each year to the future of the company will be determined (qualitative determination based on quantitative analysis) for utilization in our later valuation methodologies. What is the significance of audited financial statements to the financial analysis? Certainly they provide added assurance of accuracy, but often the analyst must later focus on unaudited interim information that is relevant to the valuation date. Financial analysis can be useful in determining the reasonableness of this unaudited data by comparisons to prior trends and revenue/cost relationships.

Comparative industry statistics from the 1999–2000 Robert Morris Associates (RMA—now referred to as the Risk Management Association) financial statement studies were selected for SIC 3829—"Manufacturing—Measuring & Controlling Devices." The comparative industry sample size included companies with revenues raging from $10 to $25 million, which was the sample closest to the Company's revenue level.

Comparisons of company performance to industry benchmarks are important. Here the analyst utilized two sources of industry data. The analyst must search carefully for the best sources. More than one may be helpful. One industry source may cover different factors or provide expanded information on certain cost areas. Trade association information, one of the best sources, was not available due to the tight focus of the business. The range of revenues for the industry benchmarks was provided. Analysts also may wish to disclose the number of companies falling within that range. Is it an adequate number for comparative purposes? Analysts should also be aware of the limitations of the data on which they rely. For example, trade association data may be very detailed but out of date. Also, statistical reliability for inference to an entire industry is not assured by these sources.

Balance Sheet Overview—Unadjusted Data

Balance sheets for the Company as of December 31, 1994, through May 31, 2000, are shown in Exhibit 9.13. Below are discussions of individual assets and liabilities.

Operating Cash Balances. As can be seen throughout the period analyzed, the cash account varied as a percent of total assets between 12.0 as of December 31, 1997 and 21.5 as of December 31, 1999. As of May 31, 2000, the cash account was $4,367,504 (17.0 percent of total assets.) Besides cash, the Company had an amount of $1,128,321 (4.4 percent) in securities held to maturity. Overall, the most highly liquid assets of the Company were approximately 21.4 percent of total assets as of May 31, 2000. This is high compared to the RMA database, which shows the cash amount as a percent of total assets as 8.6 percent.

The Company management stated that the Company has been very conservative; therefore, the cash reserves were traditionally high.

Accounts Receivable. Average number of days of sales in receivables (which measure the effectiveness of the firm's credit policies) were 38 days in 1999, which is favorable.

Acme's business is cyclical; therefore, during the winter months the amounts of accounts receivable and sales are low. These amounts are high in spring and summer. Consequently, the amount of accounts receivable was $2,795,967 as of December 31, 1999, and $4,585,083 as of May 31, 2000.

Exhibit 9.10 shows an analytical aging comparison of receivables for 1999 and 1998 for Acme.

Exhibit 9.10 Receivables Aging Comparison

	0–30 days	31–60 days	61–90 days	Over 90 Days	Allowance for Bad Debt	Total
1999	$2,045,817	$329,163	$174,793	$963,172	-$716,979	$2,795,967
1998	$2,245,242	$414,751	$279,135	$798,087	-$815,496	$2,921,720

It should be noted that this aging represents aging from invoice date. The Company is generally conservative in extending credit. While most terms are net 30 days, there are exceptions. Domestic customers are net 30 days, while the international distributors are either net 60 days or letter of credit.

Income Taxes Receivable. There is an amount of $301,451 shown as income taxes receivable as of December 31, 1998. In that year, the Company management overestimated its deposits of estimated income tax payments, expecting a better year than the one that actually materialized.

Inventories. Inventories include raw materials, work-in-process, and finished goods, and are valued at the lower of cost (first-in, first-out, FIFO) or market. As of May 31, 2000, total inventory accounted for $5,275,013, or 20.6 percent of total assets, which is lower than the RMA data of 30.8 percent. The typical inventory turnover at Acme is between 2.5 and 2.9 turns per year.

Usually the raw materials can be converted into a finished product in as little as two to three weeks. Historically, the inventory levels oscillated from $4,450,491 (18.4 percent) as of December 31, 1996 to $5,465,804 (22.7 percent) as of December 31, 1998. Since then the inventory levels were at approximately 21 percent of total assets. Per management, Acme has not put an emphasis on inventory control in the past.

Fixed Assets. The fixed assets consist mainly of land, building, and manufacturing equipment. Depreciation is computed on a straight-line, 150 percent declining balance basis over the estimated useful lives of the property, plant, and equipment. The estimated useful lives range from two to 25 years. The following lives are used for depreciation purposes:

Building	25 years
Manufacturing equipment	5 to 12 years
Office furniture and fixtures	5 to 10 years
Automobiles	3 to 5 years
Equipment leased to others	2 years

The Company leases its manufacturing facilities and office space from Acme Owners, Ltd., headed by officers of the Company. The lease has an original term of 18 years, with the lease expiring October 31, 2006. The lease agreement states that the parties to the lease shall renegotiate the amount of rent every five years.

The net fixed assets amount on the Company balance sheet as of May 31, 2000, was $7,153,778, or 27.9 percent of total assets, which was higher than the RMA data of 16.3 percent.

Other Assets. The other assets account of $2,000,984 as of May 31, 2000, is comprised of patents, officers' life insurance, other receivables, deferred taxes, and securities held to maturity. The other receivables account of $402,131 is comprised of premiums for split-dollar life insurance for John J. Acme, Jr., and Rhonda Acme Williams. The deferred income taxes amount of $954,150 is a result of the types of temporary differences such as uniform capitalization, depreciation, capital lease, reserves for inventory obsolescence, unrealized holding gains and losses for securities available for sale, and disposal costs of certain materials.

The securities held to maturity account is comprised of U.S. Treasury bills and corporate bonds.

Accounts Payable. Throughout the period analyzed, the accounts payable amount for Acme fluctuated between $800,000 and $1,400,000. The Company's policy is to pay all its invoices within vendor's terms, which are generally 30 days.

Accrued Compensation and Related Items. This account is comprised of accrued payroll, accrued payroll taxes, and accrued profit-sharing contribution, and it was fairly constant throughout the period analyzed, at around 4 percent.

Accrued Expenses and Other Liabilities. The largest items included in this category are reserves for source disposal and reserves for warranty repairs. This account experienced a large increase in 1997, when it reached $1,566,176. The increase was due to two factors: the price of nuclear materials disposals increased and the Company had to pay to dispose of a larger than usual number of nuclear sources.

Unearned Income. Unearned income is comprised of two items: prepaid extended warranty contracts and prepaid badge monitoring services. The increase in 1999 over 1998 was due to an erroneous calculation in 1998 causing the understatement of the actual unearned income.

Obligation Under Capital Lease. The capitalized lease obligation represents the present value of future minimum lease payments for the land, building and computer equipment. As of December 31, 1999, the Company's long-term obligation under the capital lease was $7,958,802.

Stockholders' Equity. As of the Valuation Date, the Company's authorized capital stock consisted of 124,684 voting shares of $1.50 par value common stock issued and outstanding.

As of the Valuation Date, the Company had 102 shareholders who owned common stock.

An analysis by the Company of the changes during 1998 and 1999 in accumulated other comprehensive income for cumulative currency translation adjustments resulted in negative amounts of $213,684 and $219,717, respectively.

The management believes it has properly accounted for all contingent liabilities, and the Company has no material off–balance sheet liabilities.

Income Statement Overview—Unadjusted Data

Historical comparative income statement data is shown in Exhibit 9.14 for the years ended December 31, 1995 through the LTM as of May 31, 2000. Acme's total revenues had increased from $23,051,330 for the year ending December 31, 1995 to $27,577,739 as of December 31, 1996. Total revenue amount was almost flat, around $29,000,000 for the years ending 1997, 1998, 1999 and the LTM ending May 31, 2000. The compound annual growth rate for revenues over the period analyzed was approximately 5.0 percent. Historically, the net income (before adjustments) increased from a low of 1.9 percent of total revenue in 1997 to a high of 5.1 percent for the LTM ending May 31, 2000. Various components of the income statement discussed in this section were expressed as a percentage of total revenues. A more detailed analysis of the above trends is given below.

Revenues. Total revenues were almost flat at around $29 million since 1997, reaching $28,585,677 during the LTM ending May 31, 2000. As can be seen in Exhibit 9.14, historically the total revenue amounts were comprised of revenue from sale of equipment, parts and repairs, training, rentals and sales of leased equipment, and other income (comprised of interest income on investments).

For the LTM ending May 31, 2000, the highest amount of revenues came from sale of equipment (70.4 percent of total revenue) and parts and repair (19.2 percent).

Company revenues follow a cyclical pattern. Business is very good and generates high revenue in warm-weather months when most construction work is done. Business drops off significantly in the cold-weather months of November through February.

Cost of Goods Sold. Cost of sales decreased from approximately $14.6 million (50 percent) in 1998 to approximately $13.6 million (48 percent) in 1999 and was lower than the RMA data of 61.5 percent. In 1998 the Company employed approximately 176 people. At that time, management had forecasted a high increase in orders for the Company; therefore, many people were hired. The increase in orders never materialized. As a result, as of the end of 1999, the number of people employed dropped to approximately 141, which resulted in a decrease of overhead. As of the Valuation Date, there were approximately 150 people employed.

Selling, General, and Administrative Expenses (SG&A). The SG&A expenses followed a similar trend with cost of sales for the same reasons explained above, dropping from approximately $12.3 million (42.5 percent) in 1998 to approximately $11.3 million (39.6 percent) in 1999, and were roughly comparable to the RMA data of 36.5 percent.

The "royalty" account of the SG&A expenses encompasses royalties that Acme agreed to pay to a competitor. These expenses will no longer apply after the Valuation Date, since the Company discontinued selling the related model.

Operating Profit. As a result of the reduced expenses mentioned in the paragraphs above, the operating profit margin—as defined by Earnings Before Interest and Taxes (EBIT)—increased after 1998 to 12.7 percent in 1999 and 14.3 percent for the LTM ending May 31, 2000.

Net Income. Acme's net income margin displays the same pattern as that of the operating profit, rising after 1998 to 4.1 percent in 1999 and to 5.1 percent for the LTM ending May 31, 2000.

Cash Flow Analysis

The Company's cash flow statements for 1995 through 1999 are shown in Exhibit 9.15. In 1997 substantial cash had been required to build up inventory in expectation of a good year in 1998. The Company made continuous capital expenditures throughout the full period analyzed.

The level of discussion of the financial analysis presented within the report is much less than was actually performed by the analyst. The reporting focus is on critical factors and value drivers for the business. An analyst should not just make a presentation of financial data but answer the critical question as to why this is relevant to the determination of value. Does the analysis point out unusual cost relationships that require further inquiry? Does the analysis help identify nonrecurring and potential nonoperating income and expenses? How does the company compare to its peer group (accepting the limitations of the industry data)? Does the lower current ratio indicate that the company is weaker, or perhaps more effectively managed, than the industry peer group?

Summary of Financial Statement Analysis

- The Company has adopted a very conservative strategy in the past. It maintained high cash reserves and chose not to incur interest-bearing debt.
- Average number of days receivables (which measure the effectiveness of the firm's credit policies) were 38 days in 1999, which is favorable.
- The Company's policy is to pay all its invoices within vendor's terms, which is generally 30 days.
- As of December 31, 1999, the Company's long-term obligation under the capital lease was $7,958,802.
- Total revenues were almost flat at around $29 million since 1997, reaching $28,585,677 during the LTM ending May 31, 2000.
- Company revenues follow a cyclical pattern. The business is very good and generates high revenue in warm-weather months when most construction work is done.
- In 1998 the Company employed approximately 176 people. At that time, management had forecasted a high increase in orders for the Company; therefore, many people were hired. The increase in orders never materialized.

At the end of the financial analysis section, the appraiser has again provided a helpful list of summary points from the prior detailed analysis. These will be used in the assessment of business and financial risk to the enterprise and indications of expected future performance based on past trends. Nonoperating assets were also identified. A presentation of nonoperating assets and their impact on value is presented later in the report.

Adjustments to Financial Data for Valuation Purposes

An important part of most valuations of smaller businesses is the adjustment of the financial statements to provide an accurate portrayal of economic income and of the operating balance sheet. Adjustments were made to the reported data of Acme, as shown and detailed in Exhibit 9.17, for two purposes:

1. Remove income from excess assets and nonoperating gains. We adjust for income from excess assets and nonoperating items by removing their impact from both the balance sheet and income statement. The only items of this nature on Acme's balance sheet were cash and equivalents and investments in securities. Accordingly, the associated interest income on Acme's income statement was also adjusted in order to have a true representation of the operating condition at Acme.
2. Eliminate the effects of nonrecurring items and any other items that distort historical reported income as an indicator of normal, ongoing earning power. In this case, we adjusted for the legal expenses (expenses of $305,966 under the "Patents and Attorney" account in 1997 were normalized to $120,000 and expenses of $181,769 and $27,125 under the "Legal and Consulting" account in 1997 and 1998 were normalized to $75,000), and eliminated the related "Oven Royalty" amounts. Other than that, no other nonrecurring expenses were detected.

Several adjustments for nonoperating and nonrecurring items are discussed. Notice that the reasons for the adjustments are also provided. The analyst is valuing a minority interest, so controlling interest adjustments (reflecting the power to change corporate policy) are not made.

Valuation Approaches/Methods

There are three traditional valuation approaches: the cost or asset approach, the market approach, and the income approach. Practitioners differ on the classification of specific valuation methods within these three classes; however, it is generally agreed that all valuation methods can be described either as a form of one of these approaches or as a hybrid of two or more of these approaches.

Asset-based methods establish value based on the cost of reproducing or replacing the property, less depreciation from physical deterioration and functional and economic obsolescence, if present and measurable. Such approaches usually give an indication of the value of a controlling interest from which appropriate discounts may be warranted for noncontrolling interests.

Market methods are used to estimate value through analysis of recent sales of comparable property. Market-based approaches often are used to provide an indication of the value of the entire stockholders' equity or a partial interest therein, or the value of the entire invested capital (debt and equity). When used for these purposes, the market approach requires the selection of appropriate guideline companies (publicly traded or private companies); the determination of market value ratios

for the guideline companies based on the market price or selling price of the security or business compared to various parameters, such as earnings, cash flow, book value, and so on; the selection of appropriate market value ratios for the subject company based on a comparison of the subject company to the guideline companies; and the determination of applicable premiums and discounts based on any differences in ownership percent, ownership rights, business ownership form, or marketability between the subject company and the guideline companies.

"Income," as used in the term "income approach," is a general term that connotes any future benefits that can be quantified in monetary terms. It does not imply that income-based approaches should be used only with projections of "income" in the accounting sense. Rather, income methods involve two general steps. The first is making a projection of the total monetary benefits expected to accrue to an investor in the property. The second step involves either discounting these monetary benefits to present worth over the entire projection period, including a terminal-year value, or capitalizing a single period amount.

Various appraisal methods combining aspects of one or more of the three basic classes of appraisal approaches can be used. In any appraisal study, all applicable methods should be considered, and the method(s) deemed most probative to valuing the appraised property will then be selected as the proper methods(s) to use for that study.

A valuation report is an educational tool designed to acquaint the reader with the process of developing the opinion and providing support for the ultimate conclusion. In this section, the analyst briefly lists the three approaches to value and what each involves. Under each approach, various methods are available. This brief logical framework better prepares the reader for the detailed analysis to follow. The analyst also indicates which approaches and methods are the most relevant for this assignment.

As a result of this process, we concluded that the Income Capitalization Method, with a capitalization rate derived through the Weighted Average Cost of Capital[10] (WACC) formula, was the most appropriate method in this instance. We considered market methods and asset methods as correlative methodology.

The analyst has decided to focus on the capitalization of income utilizing a Weighted Average Cost of Capital (WACC). This method often is selected in valuing controlling interests where a change in the capital structure is likely. It can, however, be used for minority interest, utilizing the existing capital structure of the company.

[10] Observation: An invested capital method was used to value a minority interest by a procedure involving (first) valuing overall capital and (then) subtracting debt, the company's actual amount of debt in its capital structure. This is because it would be beyond the power of a noncontrolling stockholder to change the capital structure.

The resulting value from the application of the main method selected is the fair market value of the operating Company on a minority marketable basis. Since the purpose of our valuation is to determine the fair market value of a minority nonmarketable interest in the shares, the final steps in the valuation process are the subtraction of interest-bearing debt, application of a discount from the marketable value to account for the lack of marketability of the subject minority interest, and then the addition of value attributable to any nonoperating or excess assets of Acme (net of appropriate discounts).

The following sections of this report discuss the application of the above methods leading to our conclusion of value for a minority interest in the common stock of the Company.

Income Approach

Income Capitalization Method

This method is based on the theory that the investment should yield a return sufficient to cover its initial cost and to justly compensate the investor for the inherent risks of ownership over the life of the investment. The value of closely held stock of an operating business is generally expressed as a function of its earning or cash-generating capacity, which is then capitalized or discounted at appropriate risk-adjusted rates.

Capitalization of earnings is an income approach to valuation wherein an estimate of the next period's income is divided by a capitalization rate to arrive at the estimated fair market value of the business. The inherent assumption in applying this method is that a single earnings number, grown at a constant rate, best represents the future earnings capacity of the Company.

> The method is explained further. What are the steps involved in the application of the method? What inputs are required for the calculation and how are they developed?

The income capitalization method with a capitalization rate derived through the Weighted Average Cost of Capital (WACC) formula requires the following general steps:

1. Determination of a normalized level of income. In the case of Acme, we defined "income" as net free cash flow to overall invested capital (NCF[11]). Invested capital is all interest-bearing debt plus equity.
2. Calculation of an income capitalization rate from market rates of return, as adjusted for the specific risks of the subject company and for the type of "income" to be capitalized.

[11] Earnings before interest and taxes
− Taxes on EBIT at effective tax rate
+ Depreciation
− Capital expenditures
± Changes in working capital
= Net cash flow to overall invested capital

3. Capitalization of the normalized NCF into an indication of invested capital value attributable to Acme's operations, using the capitalization rate derived through the WACC formula.
4. Subtraction of Acme's total interest-bearing debt and addition (can add discounted value to discounted operating value as well) of any nonoperating assets as of May 31, 2000, to determine the value of Acme's common stock on a minority interest basis.
5. Application of appropriate discount for lack of marketability to determine the fair market value of Acme's common stock on a minority ownership interest basis.

Factors Affecting the Selection of a Capitalization Rate for Acme

An investor in Acme would consider the following quantitative factors related to Acme:

- Net revenues were almost flat at around $29 million since 1997, reaching $28,585,677 during the LTM ending May 31, 2000. Acme has exhibited an approximate 1.0 percent compounded annual growth over the last three and a half years. The Company's adjusted operating profits have risen from $1,739,378 to $3,798,117 over the same time period.
- Acme is relatively small, based on both sales and assets. Size is generally considered inversely proportional to investment risk.
- A comparison and analysis of Acme's gross margin for the 12-month period ended May 31, 2000, with those companies that fall within SIC 3829, as previously defined, as presented in the 1999 RMA studies, reveals that, at 53 percent, Acme compares favorably with the 38.5 percent margin contained by the industry data source.
- The Company's adjusted operating margin of 13.5 percent exceeds the 2.1 percent operating margin for RMA and is comparable to the 10.3 percent operating margin (calculated before depreciation) for the Industry Composite.[12]
- At 52.5 percent, Acme's total book value of stockholders' equity (net worth) as a percentage of total assets is comparable to the 54.1 percent net worth margin as presented in the RMA studies and generally suggests that Acme has a strong balance sheet as of May 31, 2000. At 36.4 percent, Acme's total debt (comprised of obligations under capital lease) to total asset ratio indicates that Acme is moderately leveraged.

On balance, we would conclude from the above quantitative factors that Acme would be considered somewhat average in desirability as an investment compared to alternative investments in the marketplace.

In addition to the quantitative factors discussed above, an investor would consider the following factors in assessing Acme relative to the risk of alternative investments in the marketplace. Based on our market analysis, it is our opinion that potential investors in Acme would put considerable emphasis on these qualitative factors.

- Currently, the Company has a balanced management team comprised of individuals with extensive experience in the measuring devices industry.

[12] Source: Ibbotson Associates, *Cost of Capital Quarterly 2000 Yearbook*.

- Key person risk—Mr. Acme made all major management decisions until the last day he was in the office. Mr. Acme is covered by a minimal key person life insurance policy, in the face amount of approximately $200,000, for which the Company is the beneficiary. The sudden loss of the services of the Company's founder, president, and chairman of the board and the fact that there were no succession plans in place for a smooth transition are negative factors.
- Acme established long-term relationships and has very good working relationships with its customers and its suppliers. The maintenance of those relationships is evidence of the resilience of these relationships.
- During the fiscal year ending December 31, 1999, approximately $3.7 million in revenues, or about 13 percent of total sales, were derived from its 10 main customers. This percentage has been fairly constant since 1996. The Company is not reliant on any of its customers to generate revenues, and the loss of any of its customers will not adversely affect its operations. This fact is a positive factor.
- Company revenues follow a cyclical pattern. Business is very good and generates high revenue in warm-weather months when most construction work is done. Business drops off significantly in the cold-weather months of November through February.
- The constraints that Acme could face are on floor space. Currently, Acme has a maximum potential capacity of production of approximately $31.0 million in sales. If orders increase over this amount, the Company management will have to search for additional floor space for its production facility. This capacity constraint is a potentially negative factor.
- Acme has well-maintained machinery and equipment. Nevertheless, capital expenditures may be required in the future for the acquisition of new equipment and for investing in its future growth. This is a potential drain on future cash flow and is a somewhat negative factor for a minority shareholder in Acme.
- Acme, which is operating in a difficult industry environment, is being squeezed by the bargaining power of its buyers and suppliers, as well as being concerned with the immediate loss of market share in the event of a breakthrough discovery of a substitute product that does not use radioactive materials.

On the basis of the above qualitative factors, we conclude that Acme would be considered of somewhat below average desirability as an investment compared to alternative investments in the marketplace.

Many valuation reports contain sections that almost seem to be stand-alone documents. There is no explanation regarding how the information presented in a separate section impacts the decisions made by the analyst in other areas of the report. Here, the analyst has taken information gathered from previous discussions in the report (qualitative and quantitative factors) and discussed its impact on the desirability of the company as an investment. Doing this takes into account a risk assessment involving financial strength, industry issues, comparisons to industry peer groups, management strength, and many other qualitative factors. It is left to the analyst to determine their ultimate significance to the assignment.

Derivation of Normalized NCF and Capitalization Rate

The quantitative and qualitative factors discussed above have a direct impact on our selection of the capitalization rate, through their incorporation into the "Adjustment for Risk Factors Specific to Acme" from Exhibit 9.18. This adjustment, the estimation of the capitalization rate as a whole, and the development of a normalized NCF are discussed in the following paragraphs.

In order to determine a normalized level of NCF for the twelve months ending May 31, 2000, we considered the following:

1. Management's 2001 budget
2. Discussions with management regarding future growth and margin expectations for Acme
3. Acme's revenues and adjusted operating performance for the years ended December 31, 1996 through LTM ended May 31, 2000

As can be seen in Exhibit 9.17, Acme's revenues stayed flat at approximately $29 million between the year ended December 31, 1996, and the LTM as of May 31, 2000. Budgeted 2001 revenues were $28 million.

Accordingly, we have estimated normalized revenues based on recent historical and budgeted revenues. We estimated normalized revenues as the average of 2001 budgeted and the 4.5-year average of 1996, 1997, 1998, 1999, and LTM ending May 31, 2000 revenues, thereby giving credence to both historical and expected future revenues. Normalized revenues were approximately $28.0 million (($27,577,739 + 28,720,737 + 28,921,688 + 28,599,155 + 28,585,677) / 5 + 28,000,000) / 2 = $28,240,500 or $28.0 million, rounded).

Also in Exhibit 9.17, the adjusted EBIT margin for the past four years was the following: 12.1 percent for the fiscal year ending December 31, 1996; 7.0 percent in 1997; 6.0 percent in 1998; 12.4 percent in 1999; and 13.3 percent for the 12 months trailing May 2000. The average EBIT margin for these years was approximately 10.1 percent (12.1 + 7.0 + 6.0 + 12.4 + 13.3) / 5 = 10.16; 10.2 percent rounded). Considering the above, we believe an EBIT margin of approximately 10.0 percent is a reasonable estimation of long-term normalized EBIT margin for Acme.

To determine a normalized level of EBIT, we need to apply the normalized EBIT margin to our estimate of normalized revenues. Therefore, applying the normalized EBIT margin of 10.0 percent to normalized revenues of $28.0 million implies a normalized EBIT of approximately $2,800,000 ($28.0 million × 0.1 = $2,800,000). Depreciation and amortization exceeds capital expenditures due to long life assets acquired in the past.

All the other items in the formula for computing the NCF, unless noted otherwise, were calculated using the management estimation. The working capital need was calculated by applying the 25 percent Debt-Free Working Capital (DFWC) to sales relationship (ratio developed in Exhibit 9.16) to the difference between the revenues incurred during the LTM of $28,585,677 and the normalized revenues of $28,000,000.

Income taxes at an assumed 40 percent effective rate are reflected. The capitalization rate (shown on Exhibit 9.18) was developed by starting with market evidence of returns to develop a discount rate applicable to net cash flow of a typical "small" public company by using the capital asset pricing model (CAPM) method.

The development of the level of income or cash flow to be capitalized is explained in detail. Why not utilize a weighted average of past performance? Here the analyst explains the choices made. For a capitalization method, we are applying it to the next year's expected cash flow. With growth in revenue being flat and expense behavior in line with past performance, the analyst is using an average of past performance for revenue and budgeted 2001 performance, absent growth. *Note:* Most analysts would have adjusted working capital needs to reflect the 3 percent growth assumption.

CAPM

The CAPM uses the beta coefficient to measure the extent to which the returns on a given investment track the stock market as a whole. Beta is a gauge of a security's volatility in comparison with the market's volatility.

Stocks whose betas are greater than 1.00 tend to have a high degree of systematic risk and a stronger sensitivity to market swings. Conversely, stocks whose betas are less than 1.00 tend to rise and fall by a lesser percentage than the market.

Since Acme is not publicly traded, a beta cannot be directly derived. In the industry section of this report we analyzed the manufacturing of measuring and controlling devices industry in which Acme conducts its business and the construction industry in which Acme's main customers operate. We felt the risk structure of the manufacturing of measuring and controlling devices industry matches closely the inherent risks associated with the operations at Acme. The median unlevered beta for the composite industry calculated through the adjusted sum method for the SIC 3829 (Measuring and Controlling Devices) was 0.51. This number was then relevered with the Company's debt/equity capital structure to derive a beta of 0.68 (rounded).

The application of the CAPM yields an expected return on equity for a large-company stock. Due to the much smaller size of the Company, a market-based small-stock premium is added to this to obtain the expected return on the average small public company.

This rate was then adjusted by four percentage points for the various risk factors specific to Acme to derive a discount rate applicable to Acme's equity net cash flow.

From the CAPM method, an equity net cash flow discount rate of 20.24 percent was developed. This discount rate was used further in the calculation of the WACC.

Here the analyst defines a beta coefficient and its implications on the cost of capital. Also, the analyst provides significant factors including the unlevered beta for the applicable SIC and the relevered beta (reflecting the Company's assumed capital structure). Why was the CAPM chosen rather than the build-up approach? In this case, the analyst believed that the use of beta provided a better measure of the effect of systematic risk or industry risk on the capitalization rate. *Note:* The analyst used modified CAPM (see Chapter 5).

WACC

To estimate a normal debt/equity capital ratio to be used in determining Acme's WACC, we analyzed the capital structure of the Company and the industry defined by SIC 3829. This industry shows a capital structure[13] consisting of approximately 90 percent equity (at market value) and 10 percent debt. In our calculations we used the actual capital structure of Acme, since Company management specified there would not be a change in the actual capital structure in the future. This data, along with an iterative process, resulted in a capital structure of 64 percent equity and 36 percent debt.

The WACC developed through this process was then applied to Acme's invested capital (or "debt-free") net cash flow. Acme's long-term expected growth rate was subtracted from the discount rate, to derive a debt-free net cash flow capitalization rate. Based on the growth outlook of 4 percent for the measuring and controlling instruments industry, and the relative flat growth in the Company's revenues, a 3.0 percent long-term growth rate was selected, which is approximately equal to the estimated inflation growth rate as described in the "General Economic Overview" section of this report.

One of the issues of using WACC methodology is that one of the inputs is initially unknown unless a target capital structure (mix of debt and equity at market values) is utilized. In this case, we are valuing a minority interest without the power to change the capital structure to any "target." However, one of the inputs to the WACC formula is the value of equity capital. Obviously, that is not initially known. Thus, the appraiser utilized an iterative process to develop the capital structure and resulting WACC.

> The WACC developed initially is a discount rate that can be utilized to convert a stream of future cash flow into value. Because we are capitalizing a single-period income, the analyst must adjust the WACC to a capitalization rate by subtracting a factor for long-term growth (the Gordon Growth Model). Here the analyst subtracted 3 percent. Why not 5, 6, or 7 percent? Again we review past performance and the outlook for the industry. No real growth is seen, so the growth rate is equivalent to long-term expectations for inflation. The selection of the growth rate is a sensitive assumption in the development of a capitalization based on WACC. A growth rate of 5 percent would have reduced the capitalization rate by over 16 percent. The impact on calculated value would be substantial. Analysts may wish to compare the cost of capital so developed to the published WACC for many public companies as a test of reasonableness.

Applying the 12.0 percent WACC capitalization rate to the $2,440,000 normalized NCF (see Exhibit 9.17) derives an indicated value for the operating invested capital on a minority interest basis of Acme of approximately $20.3 million, rounded, calculated as follows:

$$\$2,440,000 / 0.12 = \$20,300,000$$

[13] *Ibid.*

To determine the value of Acme's equity on a minority interest basis, the value of any interest-bearing debt must be subtracted from the value of total invested capital and any nonoperating assets added. As of May 31, 2000, the most recent date available, Acme's interest-bearing debt totaled $8,245,866 ($7,719,261 + $526,605 = $8,245,866), which represents the total obligation of the Company under the capital lease. Subtracting this amount from the $20.3 million value of total invested capital derives a value for the operating equity of $12,054,134.

Summary of Value of a 100 Percent Minority Interest

The income approach discussed produced a minority interest indication of Acme's equity value of approximately $12,054,134 ($20,300,000 × 8,245,866 = $12,054,134), prior to application of a discount for lack of marketability and any addition for the impact of non-operating assets.

> At this point, the analyst has developed an initial indication of value for equity on a minority basis, before application of any marketability discount and before the addition of value for any nonoperating or excess assets. Some analysts may choose to apply those other factors now to fully determine the value under this particular method. Other analysts may utilize additional methods to develop additional indications of minority, nonmarketable value. Under the latter approach, a single value conclusion is reached later. The deduction for the lack of marketability discount and the addition of value for nonoperating assets then is performed in only one place in the report. When utilizing this latter approach, as illustrated in this report, care should be taken to make sure that all methods arrive at the same level of value (in this case, minority, marketable) before deduction or addition of other factors.

Discounted Cash Flow Approach

The Discounted Cash Flow Approach is based on the premise that the value of an asset or business enterprise is the present value of the future economic income (i.e., cash flow) to be derived by the owners of the business or asset. This method requires the analysis of revenues, expenses, capital structure, residual value, and the cost of capital (including an examination of business, financial, and systematic risk). It is most appropriate when future operating results are anticipated to be substantially different from past performance.

Based on our analysis and discussions with management, future expectations are in line with the past. No significant growth in revenue, income, or cash flow is anticipated. Therefore, while considered, we have not applied this method.

> Since the value of a company is the present value of future benefits, the discounted cash flow method is theoretically preferred. However, in this case, prior discussions and analysis indicated that no unusual events were anticipated and future growth would be minimal. The analyst has provided the reasons for considering the method but chose not to apply it for this assignment.

Market Approach

Guideline Public Company Method

As a method to selecting valuation multiplies, publicly traded investment opportunities are analyzed in terms of purchase price and earnings, and are compared to the subject business on the basis of investment risk. This method is generally referred to as a price to earnings analysis, and it has application in a variety of business valuation problems.

The following steps were taken in our selection of guideline companies for the Company valuation:

- Acme manufactures instruments for measurement of the physical properties of engineering materials. In our attempt to select guideline companies, we examined companies engaged in related segments of the measuring and controlling instruments industry. We did so by referring to Edgar Online,[14] which classifies public companies by SIC-code numbers. Edgar Online is a source of descriptive and financial information covering virtually all publicly held companies in the U.S. We reviewed the business descriptions of all companies engaged within the SIC codes for Measuring & Controlling Devices (SIC 3829), General Industrial Machinery (SIC 3569), Special Industry Machinery (SIC 3559), Machine Tool Accessories (SIC 3545), and Engineering Services (SIC 8711).
- Our initial selection criterion was that the company's stock be actively traded so that the quoted price of its securities provided a reliable measurement of fair market value. The quoted prices of inactively traded securities do not necessarily provide reliable indications of fair market value because they are illiquid and may be subject to manipulation. Implicit in this criterion is the public availability of company financial information as is required of SEC registrants. We established additional selection criteria that the company stock price exceeds $2.00 per share. Low-priced stocks frequently attract speculative buyers attracted to the stock because the price is seemingly low and appears to offer potential for gain. These securities often are little more than cheap speculative vehicles. Also, for a low-priced stock, even a very small price change can have a tremendous impact on the valuation multiple.
- Information on approximately 80 public companies was initially obtained. Further research on these initial public companies failed to disclose any entities that could be used as guideline companies in the valuation of Acme. Although there were several public companies that provide measuring and controlling devices, they were not similar to Acme from an operational and investment point of view. Most of the companies scrutinized derive their revenues from businesses that served many industries. The only company that was deemed similar to Acme from an operational point of view (i.e., Instron Corporation),[15] went private in 1999.

As a result of the above analysis, we did not utilize the public guideline company method in determining the value of a minority ownership interest in Acme.

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[14] Source: *www.edgar-online.com/bin/esearch/fullsearch.asp*.

[15] Source: *www.instron.com*.

What support did the analyst provide for not utilizing this well-accepted methodology? Application of the method requires finding companies sufficiently comparable. Many companies share SICs with the subject, but further analysis was the key. The company has a narrow focus and market niche, which was not in line with the public companies. Again the analyst documents the reasons for ultimately not applying the method. Doing this helps the reader understand the unique nature of the business and why reliance must be placed on other methodologies. Analysis and judgment may have revealed companies an analyst believes to be sufficiently similar for application of this method. Going back to RR 59-60, we see that the use of the method is supported. We also know that the terms "same" or "similar" as they apply to publicly traded companies have been widely interpreted by the courts and by analysts.

Guideline Company Transaction Method

The guideline company transaction method is very similar to the guideline public company method. In this method, the subject company is compared to similar companies that have recently been purchased.

We searched the following sources for information on relevant purchases of public and private companies within the above-stated SIC classifications:

- The transaction database of the Institute of Business Appraisers (IBA)
- *Pratt's Stats*
- The acquisitions database of Thomson Financial Securities Data Corporation (SDC)
- Houlihan Lokey Howard & Zukin's *Mergerstat Review,* within the "Instruments" classifications

Our sources, which consist of transactions occurring on a national basis, located transactions within Acme's general industry group.

The analyst documents consideration of utilizing private company transaction multiples, and indicates the limitations of the method. Why were the located comparative transactions not used? They were for acquisitions of controlling interests, and synergistic considerations may be reflected in the prices. This may move the standard of value closer to "investment value" (value to a specific purchaser). We are valuing a minority interest under fair market value definition. Can we apply a minority discount to the multiples obtained from this method to develop a value for a minority, nonmarketable interest? Many analysts do so based on the level of information available about the transactions, the number of transactions available, the dates of the transactions, and other factors. The choice is made on a case-by-case basis.

As can be seen in Exhibit 9.19, the transactions were for small- to large- size companies with revenues ranging from approximately $1.1 million to $75 million.

The transactions found occurred between 1995 and 2000. In addition, the transaction values ranged from $1.5 million to $85.0 million. The median Market Value to Invested Capital (MVIC) to Net Sales multiple was 1.13.

As with any analysis of this type and scale, information availability is often sketchy and incomplete. Moreover, information related to these transactions can be misleading, because economies of scale and synergies, which are considered in a buyer's analysis, are difficult to calculate based on historical public information. Also, this method is sometimes more applicable when valuing a control ownership interest in a company, since an eventual sale of the business would not be controllable by a minority shareholder.

As a result, we did not utilize the private company transaction method in determining the value of a minority ownership interest in Acme.

Adjusted Net Asset Method—Going Concern Value

The Adjusted Net Asset Method gives consideration to the fair market value of the assets and liabilities of the business being valued as a starting point in the determination of the value of its equity. A current and accurate accounting of the assets and liabilities of the business is essential in obtaining an accurate indication of value.

In order to determine the fair market value of a company utilizing the Adjusted Net Asset Method, we need to adjust all assets and liabilities to reflect fair market value. In addition, any off-balance sheet assets and liabilities need to be addressed. The starting point is the financial position of the Company as set forth in its balance sheet as of May 31, 2000. As discussed in the financial review, the underlying assets of the Company are, for the most part, fairly liquid, with cash and cash equivalents, contract receivables, marketable securities, and other assets comprising approximately 50 percent of total assets. The rest is comprised of inventory and fixed assets. Liabilities similarly are very liquid, and are comprised of accounts payable and obligation under capital lease. Our analysis and discussions with management determined that all balance sheet items would remain at book value in our analysis.

In addition to the assets and liabilities stated on Acme's books as of May 31, 2000, our analysis did not determine any off–balance sheet assets or liabilities.

Based on our analysis of the fair market value of the underlying assets (making small adjustments for potential bad debts) and liabilities (adjusting for extra disposing costs for nuclear material) of the Company, we have determined the underlying net asset value by subtracting the stated or estimated fair market values of the liabilities from the fair market value of the underlying assets. This calculation indicated a likely value for the total equity in the Company in the range of approximately $12.45 to $12.75 million. This provided some corroboration for our conclusion of value determined under the Income Capitalization Method.

The Net Asset Value Method derives an amount that the business as a whole would likely sell for and is therefore an amount that all shareholders would share in equally if it occurred. However, it is important to note that the choice to sell the business would be in the hands of a controlling interest shareholder and would not be controllable by a minority shareholder.

For this reason, we did not utilize the cost approach in determining the value of a minority ownership interest in Acme.

The analyst briefly considers the asset approach. Many of the company's assets are highly liquid and thus are stated at a reasonable market value. Discussions with management indicated that book value was reasonably reflective of the value of other assets. In certain types of engagements appraisals may have been necessary. No effort was made to adjust the balance sheet for the value for any intangibles that may be present, but here the balance sheet simply was viewed as an analytical tool for gauging reasonableness of the value conclusion. We are valuing a minority interest that does not have the power to cause an asset sale and receive the value of the underlying assets. Would you have included such a discussion in your report?

Other Valuation Information

We also considered the following additional valuation information:

- The Valuation Report finalized on March 15, 1991 by Mark Jones, Jr., of Valuation Nation, Inc., in which the fair market value of a 100 percent interest in the common stock of Acme as of December 31, 1989, was determined to be $10,300,410. As of that time, the Company's total net revenue for the year ended December 31, 1989, was $16,197,000; the adjusted operating income was $1,721,590, or 10.6 percent of total revenue; and the adjusted net income was $1,064,530, or 6.6 percent of total revenue. For a total of 125,000 shares as of December 31, 1989, the value per share derived was $86.00.
- We identified several transactions in the Company stock but, as per management, none occurred in the past 12 years. As a result we did not rely on the data from these transactions.

The analyst considered a past valuation report and prior stock transactions. Past transactions are an element for consideration under Revenue Ruling 59-60 but must be viewed with caution. Due to the dates and transaction circumstances, they were not deemed relevant to a determination of current value.

Discount for Lack of Marketability

When an indication of value is developed without control adjustments and using multiples, discount rates, or capitalization rates derived from quoted security prices, the resulting value is normally equivalent to a minority, marketable value. Hence, generally no specific minority interest discount is necessary. However, publicly traded securities possess a much higher degree of liquidity than do closely held securities. Without market access, an investor's ability to control the timing of potential gains, avoid losses, and make changes to their investment portfolio is severely impaired. Given two investment instruments identical in all other respects, the mar-

ket will accord a considerable premium to the one that can be liquidated into cash quickly, especially without risk of loss in value. For this reason, an ownership interest in a privately held entity usually is worth less than a comparable interest in an otherwise similar publicly held entity whose securities are readily tradable. Consequently, a discount for lack of marketability would be required to induce a hypothetical willing buyer to purchase such a closely held security.

Studies on restricted stock transactions compare the discounted prices paid for equity securities subject to trading restrictions with market prices for similar securities that are freely tradable without such restrictions.

Restricted stock studies examine the prices paid for restricted shares of companies whose ordinary shares are freely traded on one or more public markets, either on a public exchange or over the counter. Publicly traded companies are permitted to issue "investment letter" stock to "sophisticated" investors without complying with normal SEC registration requirements. The terms of such transactions vary considerably. Sometimes the investors get a commitment from the issuer to register the securities at some future date, or they get "demand" rights allowing them to require registration at any time. Sometimes they receive "piggyback" rights, which require the issuer to include the securities in any future registration undertaken by the issuer. Most often, however, the securities are subject to Rule 144 sales restrictions. Under Rule 144, the investors are not permitted to sell securities acquired in such a transaction until a required minimum holding period has lapsed. Since April 29, 1997, the required holding period has been one year; however, during the periods covered by the studies, investors generally were required to hold restricted securities for two years. After the required holding period lapses, the stock becomes marketable, although certain restrictions having to do with overall trading volume of the company's shares and the total number of shares outstanding remain in place for an additional year.

Appendix C summarizes the results of commonly cited restricted stock studies. The studies cover a broad range of periods but show remarkably consistent results. The studies report mean and/or median discounts ranging from 24 to 45 percent. The average median and average mean results reported in the studies are 33 and 31 percent, respectively.

Other Factors

In addition, several other factors were also considered in our analysis in order to estimate the appropriate marketability discount for Acme. These included:

1. Financial Statement Analysis
2. Company's Dividend Policy
3. The Nature of the Company, Its History, Its Position in the Industry, and Its Economic Outlook
4. Company's Management
5. Amount of Control in Transferred Shares
6. Restrictions on Transferability of Stock
7. Holding Period for Stock
8. Company's Redemption Policy
9. Costs Associated with Making a Public Offering

A description of these nine factors as they pertain to Acme is follows:
(Note: Some analysts reflect some of these factors in the pre-discount value.)

1. *Financial Statement Analysis*. Investors normally regard the analysis of a company's financial statements as a significant factor in determining the worth of the company's stock. Financial statements include the annual results of a company's operations (an income statement) and the company's status at its year end (a balance sheet). Financial statements also include relevant footnotes relating to the statements and the opinion of the preparer (e.g., an independent certified public accountant or CPA) as to the condition of the company and the presentation of its financial statements. A nonexclusive list of relevant inquiries to make when analyzing financial statements includes the type of opinion rendered by the preparer, the soundness of the company's capitalization, the ratio of the company's assets to liabilities, the company's net worth and future earning power, the quality of the company's revenue and earnings, and the company's goodwill.

   We found that Acme engaged Smith & Smith to perform audits on, and gave unqualified opinions with respect to, Acme's financial position as of December 31, 1995; December 31, 1996; December 31, 1997; December 31, 1998; and December 31, 1999.

   The Financial Statement Analysis section of the report describes the Company's financial position and helps identify some of the Company's strengths and weaknesses—both on an absolute basis and relative to other industry norms. Overall, based on the Financial Statement Analysis section and the analysis under the quantitative factors affecting the selection of a capitalization rate for Acme, we concluded that Acme would be considered somewhat average in desirability as an investment compared to alternative investments in the marketplace.

   This factor favors an average marketability discount.
2. *Company's Dividend Policy*. Investors regard a company's dividend policy as a factor to consider in determining the worth of that company's stock. Critical to this factor is whether an investor will receive a fair rate of return on his or her investment. The fact that a company pays small or no dividends will not always negatively affect the company's marketability.

   Even if a corporation seldom pays dividends, an investor may aim to participate in the corporation's success mainly through the appreciation in the value of his or her stock brought on by retained earnings and the possibility of a future return.

   Acme paid small dividends in comparison to its net income. We do not find this fact determinative. Acme's net income increased continually from 1997, reaching almost $1.5 million for the LTM ending May 31, 2000. Acme also had sufficient cash during the past five years. Accordingly, Acme stock might attract an investor more interested in long-term growth than in current return.

   Overall, the net effect of this favors a below average marketability discount.
3. *Nature of the Company, Its History, Its Position in the Industry, and Its Economic Outlook*. Investors generally regard the nature of a company, its history, its position in the industry, and its economic outlook as relevant factors for determining the worth of the company's stock.

Acme began its operations in 1965 and is a manufacturer of instruments for measurement of the physical properties of engineering materials. The Company faces a number of risks due to the nature of the technology employed. The major risk is that of the nuclear source material which entails a number of component risks.

Acme finds itself in a difficult environment, being squeezed by the bargaining power of its buyers and suppliers as well as being concerned with the immediate loss of market share in the event of a breakthrough discovery of a substitute product that does not use radioactive materials.

During the five-year period ending in 2004, analysts project an annual compound growth rate of 4 percent, with total U.S. industry shipments of measuring and controlling instruments reaching $24.1 billion.

These factors favor an above-average marketability discount.

4. *Company's Management*. Investors regard the strength of a company's management as a factor to consider when determining the worth of that company's stock.

   As mentioned in the Management/Personnel section of this report, the Company has a balanced management team comprised of individuals with extensive experience in the measuring devices industry. The key person factors associated with the loss of the services of Mr. Acme were previously considered in development of the capitalization rate and are not a part of this analysis.

   This factor favors an average marketability discount.

5. *Amount of Control in Transferred Shares*. Investors regard the control inherent in transferred shares as a relevant factor for determining the worth of the stock. Control reflects a shareholder's ability to direct a corporation through his or her dictation of its policies, procedures, or operations. Control of a closely held corporation represents an element of value that justifies a higher value for a controlling block of stock. An investor will generally pay more for a block of stock that represents control than for a block of stock that is merely a minority interest in the company.

   The 13.1 percent block of stock that is at issue herein represents a minority ownership in Acme. The concentration of the remaining shares indicates that a 13.1 percent block will have a medium impact on the decisions of the Company.

   This factor favors a below-average marketability discount.

6. *Restrictions on Transferability of Stock*. Investors consider transferability restrictions as a factor to consider in determining the worth of that company's stock.

   As per management, there are no contractual restrictions on the transferability of the stock at Acme.

   This factor favors a below-average marketability discount.

7. *Holding Period for Stock*. The length of time that an investor must hold his or her investment is a factor to consider in determining the worth of a corporation's stock. An interest is less marketable if an investor must hold it for an extended period of time in order to reap a sufficient profit. Market risk tends to increase (and marketability tends to decrease) as the holding period gets longer.

   We are not aware of any intention on the part of management to sell the Company in the near future. Therefore, a long-term holding period is likely.

   As such, this factor favors an above-average discount.

8. *Company's Redemption Policy*. A company's redemption policy is a factor to consider in determining the worth of the company's stock.

   Acme has no record of redeeming its shares and we are not aware of any anticipated change in this policy.

   This factor favors an above-average marketability discount.

9. *Costs Associated with Making a Public Offering*. Investors consider the costs associated with making a public offering in determining the value of unlisted stock. An above-average to average discount is warranted if the buyer completely bears the cost of registering the purchased stock. However, the discount is lessened to the extent that the buyer has the ability to minimize his or her registration costs. For example, registration costs may be minimal to the buyer if he or she has the right to compel the corporation to register (or otherwise "piggyback") the unlisted shares at its expense.

   This factor favors an above-average marketability discount as there is no obligation on the part of the Company to register the stock or bear any cost incurred to register the stock.

Overall, the analysis of the above factors indicates an average discount for lack of marketability.

Conclusion for a Discount for Lack of Marketability

The valuation approach and method are very important when determining the propriety and magnitude of a discount for lack of marketability. The income capitalization result is developed using rates of return from freely traded securities. As such, the result is regarded as a marketable result, necessitating the application of a lack of marketability discount for applicability to a privately held interest.

Accordingly, based on the above analysis, the cited restricted stock studies, and all other information in this report, a marketability discount of 35 percent was selected for application to the result of the income capitalization method.

Applying this discount to the minority marketable value of $12,054,134 derives a closely held minority interest value of approximately $7,835,187.

The prior indication of value was developed on a minority, marketable basis. Marketability here refers to the price as if freely traded. The interest in a closely held business, while clearly capable of being sold, is obviously less marketable (or less liquid) than its publicly traded counterpart. The analyst focuses on restricted stock studies for quantification of the marketability discount. Other studies (pre-IPO) are also available to assist in this process and can provide meaningful guidance.

Notice that court cases are not mentioned specifically. Such cases are relevant for issues only and not for citation as supporting a selected level of discount. Quoting cases in your report also put you on the "turf" of an attorney in a litigation engagement. Keep the issues in your "turf" based on an analysis of the specific facts and your judgment.

Nonoperating and Excess Assets

As of May 31, 2000, the total cash and equivalent account amounted to $4,367,501, or 17.0 percent of total assets, which was comprised of the following:

Cash and Equivalent	
Petty cash	$ 10,725
First Commercial Bank	2,398,171
Regions Trust	698,401
Brokerage money market	379,612
Commercial checking	526,909
National Bank of Commerce	353,683
Total	$4,367,501

As of May 31, 2000, the Company had securities available for sale and securities held to maturity which amounted to $1,128,321, or 4.4 percent of total assets, as follows:

Securities	
Stocks	
Central Power	$ 75,187
CPC	45,657
Natural Dynamic Resources	29,437
Sterling Corp.	106,633
Lauderdale	16,405
Total stocks	273,319
Bonds	
U.S. Treasury	375,000
Associates Finance	225,000
Merrill Lynch	247,500
Federal Housing Financing Agency	7,500
Total bonds	855,000
Total securities	$1,128,321

As of the Valuation Date, Acme's most liquid assets amounted to $5,495,824, or 21.4 percent of total assets, which was above the industry median (21.4 percent for Acme versus 8.6 percent 1999 RMA data). Removal of the excess cash amount aligns the Company's cash position relative to the industry median.

We concluded that the amount of $3,289,330 ($5,495,824 – $25,656,903 × 8.6% = $3,289,330) of Acme's cash and marketable securities account should be treated as a nonoperating asset. We also treated as nonoperating assets the cash surrender value of life insurance account of $86,034 and other receivables account of a nonoperating nature. In addition, as of May 31, 2000, the Company had $239,583 in securities held to maturity. We believe the Company historically had high cash reserves and the seasonality would not affect our calculation.

Discussions with management indicated that there were no other nonoperating assets or liabilities on the Company's balance sheet. Therefore, the total nonoperating asset amount, as of the Valuation Date, was approximated to $4,117,078. A 10 percent discount[16] was applied to this amount to account for the fact that the minority stockholders do not have direct access to these assets. An additional 35 percent was applied for lack of marketability as previously derived. This results in a combined discount of 41.5 percent when sequentially applied.

Accordingly, we conclude that the fair market value of the total equity of the Company, on a minority, non-marketable interest basis derived through the income capitalization method, is $10,243,678 ($7,835,187 + $4,117,078 × (1 – 41.50%) = $10,243,678).

A nonoperating or an excess asset is an asset that can be removed from operations and have little or no impact on the operating earnings stream of the business. Such assets can be excess cash, investments, owner toys, and the like. As such, their value is not directly captured by application of a capitalization rate to an operating cash flow. Nor do several other methods capture their values.

As indicated earlier, the analyst identified certain nonoperating or excess assets for consideration in this assignment. After his or her analysis, the analyst made an addition to value for these nonoperating items. Why would such an addition to value be made if the minority shareholder has no power to cause an asset sale or to tap into the value of those assets? Would not the minority owner simply focus on the earnings of the business that are available in the form of dividends, cash distributions, and appreciation of the underlying value of the minority interest? Opinion as to how this issue should be handled often is divided, but it also can depend on the facts and circumstances of the case. Regardless of the ultimate treatment, the presence of significant nonoperating or excess assets should generally receive consideration and discussion in the valuation report.

One way to incorporate the presence of such assets is to view them as reducing risk. They can provide greater short-term or long-term liquidity, which may be a factor in reducing the discount rate, capitalization rate, or market multiple. Alternatively, often, when the relative value is large for these assets, they are treated as an addition to value, net of an appropriate discount for lack of control. If the analyst treats them as an addition to value, care must be exercised to avoid double counting.

Analysts will often not reduce the discount rate for the impact of their assets on risk if they are not considered as an operating asset of the company.

[16] Source: James R. Hitchner, "Tax Court Reviews for Selecting a Discount on Non-operating Assets when Valuing a Non-controlling Interest." Based on this source and our analysis, we concluded that a combined minority/marketability discount of 10 percent is applicable in this case.

Conclusion

The Company's net revenues were almost flat at around $29 million since 1997. As a result, we discarded the Discounted Cash Flow method from our analysis and relied instead on the Income Capitalization Method.

We discarded the Guideline Public Company Method due to lack of comparability with Acme from an operational and investment point of view.

Also, we discarded the Guideline Company Transaction Method and the Cost Approach since these methods are often more applicable when valuing a control ownership interest in a company, since an eventual sale of the business or assets would not be controllable by a minority shareholder. There were also data limitations.

Exhibit 9.11 shows how the value indication was derived from the Income Capitalization Method.

Exhibit 9.11 Summary Calculation

100% Minority equity, marketable (derived from the Income Capitalization Method)	$12,054,134
− Marketability Discount	−35%
= 100% Equity value, on a minority interest	7,835,187
+ non-operating assets (cash, securities, and proceeds from life insurance of approx. $100,000) discounted by 41.5%	2,408,491
= 100% Equity minority, non-marketable	10,243,678
Total number of shares	124,684
Value/share (rounded)	$ 82.00

Based on our analysis, we have concluded that the fair market value of a minority, nonmarketable ownership interest, on a going-concern basis, in the common stock of Acme, as of May 31, 2000, based on 124,684 shares issued and outstanding, is approximately $82.00 per share ($10,243,678 / 124,684).

Per share value	$ 82.00
Value 16,279 shares	$1,334,878

The valuation conclusion is expressed again at the end of the report narrative. Here, a per-share calculation is presented as well as a total for the value of the subject interest. This information was carried forward in the report to the cover/transmittal letter and/or valuation summary. Thus, in keeping with good communications skills, the analyst told the company what the analyst was going to tell the company—and then did so.

Appendix A — Valuation Certification and Signature of the Analyst

I certify that, to the best of my knowledge:

1. The statements of fact contained in this report are true and correct.
2. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and are my unbiased professional analyses, opinions, and conclusions.
3. I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
4. I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.
5. My compensation is not contingent on any action or event resulting from the analyses, opinions, or conclusions in, or the use of, this report.
6. My analyses, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice, the Business Valuation Standards of the American Society of Appraisers Business Valuation Committee, and the Standards of the National Association of Certified Valuation Analysts.
7. No one provided significant professional assistance to the person signing this report.

Signature of the Analyst:

_____

Ms. Cyndi Smith, CPA/ABV, ASA, CVA
Senior Consultant
XYZ Appraisal Associates PLLC

Appendix B—Assumptions and Limiting Conditions

This valuation is subject to the following assumptions and limiting conditions:

1. This valuation was performed for the purpose stated in the introduction section of this report, namely for gift tax purposes, as of May 31, 2000. The various estimates of value presented in this report apply to this valuation only in the report prepared as of March 14, 2001, and may not be used out of the context presented herein.
2. Information, estimates, and opinions contained in this report are obtained from sources considered to be reliable. However, we did not independently verify such information, and we assume no liability for the accuracy of information obtained from or provided by such sources.
3. Financial information of the subject company is included solely to assist in the development of the value conclusion presented in this report, and should not be used to obtain credit or for any other purpose. Because of the limited purpose of the information presented, it may be incomplete and contain departures from generally accepted accounting principles. We have not audited, reviewed, or compiled this information, and express no assurance on it.
4. The Company and its representatives warranted to us that the information they supplied was complete and accurate to the best of their knowledge and that the financial information properly reflects the Company's results of operations and financial condition in accordance with generally accepted accounting principles. Information supplied by management has been accepted as correct without further verification, and we express no opinion on the accuracy or completeness of such information.
5. We have conducted this estimate of value only for the stipulated purpose. The distribution of the report is restricted to the use of the Attorney and the relevant taxing authorities with a need to know the results. This report will not be distributed to parties other than those named herein, nor will the report be used for any other purposes, without the prior written consent of XYZ Appraisal Associates PLLC.
6. Possession of this report, or a copy thereof, does not carry with it the right of publication of all or part of it, nor may it be used for any purpose by anyone other than those enumerated in the introduction section without the previous written consent of the appraisers and, in any event, only with proper attribution.
7. The terms of this engagement do not require us to give testimony in court, be in attendance during any hearings or depositions, or appear at any Internal Revenue Service examination, with reference to the Company being valued, unless previous arrangements have been made.
8. The various estimates of value presented in this report apply to this valuation only and may not be used out of the context presented. This valuation is valid only for the purpose specified.
9. This valuation reflects facts and conditions existing or reasonably foreseeable at the Valuation Date. Subsequent events have not been considered, and we have no obligation to update our report for such events and conditions.
10. We have assumed that the Company was formed in accordance with, and the provisions of its articles of incorporation and by-laws conform to the require-

ments of, the State of Colorado. Our valuation conclusion is an estimate of value, including the estimated impact of applicable valuation discounts and/or premiums. Our conclusions regarding the impact on value of applicable provisions in the Company documents and/or stock purchase agreement reflect the estimated economic impact of such provisions, assuming such provisions are fully enforceable and are to be taken into account for valuation purposes.

11. Our valuation estimates fair market value as defined in this report and XYZ Appraisal Associates PLLC did not value the subject interest at an "investment value" or "strategic value" to a specific potential acquirer. An actual transaction of an equity interest in the Company may be concluded at a higher or lower price than our value conclusion because of the above and other factors. Therefore, no assurance is provided that an actual sale of an interest in the Company would occur at the price indicated by our valuation conclusion.
12. Our engagement for this valuation consulting work does not include any procedures designed to discover defalcations or other irregularities, should any exist. In addition, our work does not include any procedures designed to identify or evaluate the impact of the Year 2000 Issue.
13. We are not licensed attorneys. Any comments, discussions, or analyses of Company documents or any other federal or state law, provision, or regulation is not to be considered a legal opinion. Our focus is to consider all relevant factors that might impact value and estimate the extent of the impact of such factors.
14. The historical financial statements presented in the exhibits are included solely to assist in the development of the value conclusion presented in the report, and they should not be used to obtain credit or for any other purpose. XYZ Appraisal Associates PLLC has not been engaged to apply, and therefore has not applied, procedures prescribed by the American Institute of Certified Public Accountants to any historical or prospective financial information included or incorporated in this report. Accordingly, we are not assuming the role of reporting Certified Public Accountants and are not separately reporting on such financial information by virtue of its incorporation into the valuation of the Company.
15. We have made no investigation of title to property, and assume that the owner's claim to the property is valid. We have given no consideration to liens or encumbrances, which may be against the property except as specifically stated in this report.
16. We assume that the Company is in full compliance with applicable federal, state, and local environmental regulations and laws.
17. This report was prepared by Cyndi Smith. Neither the professional who worked on this engagement nor the members of XYZ Appraisal Associates PLLC have any present or contemplated future interest in the Company, any personal interest with respect to the parties involved, or any other intent that might prevent us from performing an unbiased valuation. Our compensation is not contingent on an action or event resulting from the analyses, opinion, or conclusions in, or the use of, this report.

Appendix C—Restricted Stock Studies: Discounts Observed

Exhibit 9.12 Restricted Stock Studies: Discounts Observed

Study (period examined)		Published	Number of observations	Observed Discounts: Median discount	Observed Discounts: Mean discount	Observed Discounts: Standard deviation	Observed Discounts: Low
SEC Institutional Investor Study (1966–1969)	**(a)**	1971	398	24%	26%	n.a.	(15%)
Gelman (1968–1979)	**(b)**	1972	89	33%	33%	n.a.	< 15%
Trout (1968–1972)	**(c)**	1977	60	n.a.	34%	n.a.	n.a.
Moroney (1968–1972)	**(d)**	1973	146	34%	35%	18%	(15%)
Maher (1969–1973)	**(e)**	1976	34	33%	35%	18%	3%
Standard Research Consultants (1978–1982)	**(f)**	1983	28	45%	n.a.	n.a.	7%
Willamette Management Associates (1981–1984)	**(g)**	**	33	31%	n.a.	n.a.	n.a.
Silber (1981–1988)	**(h)**	1991	69	n.a.	34%	24%	(13%)
FMV Opinions, Inc. (1969–1992)	**(i)**	**	> 100	n.a.	23%	n.a.	n.a.
Management Planning, Inc. (1980–1995)	**(j)**	1997	49	29%	28%	14%	0%
Averages				33%	31%		

NOTES:

n.a. Result not computed in study or not available.

(a) From "Discounts Involved in Purchases of Common Stock (1966-1969)," *Institutional Investor Study Report of the Securities and Exchange Commission*. H.R. Doc. No. 64, Part 5, 92d Cong., 1st Sess. 1971, pp. 2444–2456.

(b) From Milton Gelman, "An Economist-Financial Analyst's Approach to Valuing Stock of a Closely Held Company," *Journal of Taxation*, June 1972, pp. 353–354.

(c) From Robert R. Trout, "Estimation of the Discount Associated with the Transfer of Restricted Securities," *Taxes*, June 1977, pp. 381–385.

(d) From Robert E. Moroney, "Most Courts Overvalue Closely Held Stocks," *Taxes*, March 1973, pp. 144–154.

(e) From J. Michael Maher, "Discounts for Lack of Marketability for Closely-Held Business Interests," *Taxes*, September 1976, pp. 562–571.

(f) From "Revenue Ruling 77-287 Revisited," *SRC Quarterly Reports*, Spring 1983, pp. 1–3.

(g) This study is unpublished. It is discussed in Pratt, Shannon P., et al., *Valuing a Business: The Analysis and Appraisal of Closely Held Companies., Third Edition*, Homewood, Illinois: Irwin Professional Publishing, 1995, p. 341.

(h) From William L. Silber, "Discounts on Restricted Stock: The Impact of Illiquidity on Stock Prices," *Financial Analysts Journal*, July-August 1991, pp. 60–64.

(i) This study is unpublished. It is discussed in an article by Lance S. Hall and Timothy C. Polacek, "Strategies for Obtaining the Largest Discount," *Estate Planning*, January/February 1994, pp. 38–44.

(j) This study was published as Chapter 12 of Mercer, Z. Christopher, *Quantifying Marketability Discounts*, Peabody Publishing, LP, 1997, pp. 345–364.

Appendix D—Professional Qualifications of the Analyst/Appraiser

CYNDI SMITH, CPA/ABV, ASA, CVA
Professional Qualifications

Experience

Senior Consultant in the Business Valuation and Litigation Services group of XYZ Appraisal Associates PLLC. Cyndi's expertise includes both valuation and valuation-related consulting for entire business entities and business interests.

Cyndi specializes in financial modeling and cash flow forecasting. She has performed valuations of closely held corporations for mergers and acquisitions and gift and estate tax purposes. Cyndi's industry experience includes but is not limited to companies operating in the manufacturing industry, construction, automotive parts manufacturers, battery manufacturers, specialty chemical companies, investment holding companies, restaurant companies, and engineering companies.

Prior to joining the Valuation Group at XYZ Appraisal Associates PLLC, Cyndi spent four years with National Accounting Firm LLP. Cyndi's experience was predominantly in the valuation department.

Education

- M.B.A. Colorado State University (Business Strategy), (1996)
- B.A. Colorado State University (Accounting), (1990)

Membership in Professional Organizations

- American Institute of Certified Public Accountants (CPA/ABV)
- Certified Public Accountant, Accredited in Business Valuation
- American Society of Appraisers (ASA)
- Intellectual Property Owners Association
- National Association of Certified Valuation Analysts (CVA)

Speeches and Presentations

- Colorado State University: "Current Developments in Business Valuations" (1998)
- University of Pittsburgh: "Current Developments in Business Valuations" (1997)

Appendix E—Other Sources Consulted

Business Valuation Standards, ASA and NACVA.

Fishman, Pratt et. al. *Guide to Business Valuations*, Forth Worth, TX: Practitioner's Publishing Company, 1998.

Pratt, Shannon P. et al. *Valuing a Business: The Analysis and Appraisal of Closely Held Companies*, 4th ed. Homewood, IL: Irwin Professional Publishing, 2000.

RMA Annual Statement Summaries. Philadelphia: Robert Morris Associates (currently Risk Management Association), annual, 1995-1999.

Standard Industrial Classification Manual. Washington, DC, 1987.

Uniform Standards of Professional Appraisal Practice. Appraisal Foundation.

Acme Measurement Devices, Inc., information including:

- Financial statements of the Company for the years ended December 31, 1995 through 1999.
- Various Company schedules of expenses, personnel, fixed assets, etc.
- Articles of incorporation, by-laws, board and stockholder meeting minutes.
- On-site visit and teleconferences with Company officers.

Exhibits

The historical financial statements in Exhibits 9.13, 9.14, and 9.15 for Acme were prepared from Company financial statements for the purpose of preparing the valuation. XYZ Appraisal Associates PLLC has not audited, reviewed, or compiled these statements and expresses no opinion or any other form of assurance on them.

Exhibit 9.13 Acme Measurement Devices, Inc.—Comparative Balance Sheets

	Audited 12/31/95	%	Audited 12/31/96	%	Audited 12/31/97	%	Audited 12/31/98	%	Audited 12/31/99	%	Internal Financials 05/31/00	%	1999-2000 RMA (a) ratios %
Assets													
CURRENT ASSETS													
Cash & cash equivalents	$3,299,826	14.9	$4,708,548	19.5	$2,976,288	12.0	$4,352,541	18.1	$5,236,842	21.5	$4,367,504	17.0	8.6
Securities													
Available for sale—													
at market value	712,058	3.2	777,762	3.2	643,511	2.6	519,198	2.2	280,821	1.2	0	0.0	
Held to maturity	587,864	2.7	669,999	2.8	179,822	0.7	0	0.0	375,000	1.5	1,128,321	4.4	
Trade accounts receivable	2,445,408	11.0	3,384,081	14.0	4,181,567	16.9	2,921,720	12.1	2,795,967	11.5	4,585,083	17.9	29.6
Income taxes receivable		0.0		0.0		0.0	301,451	1.3		0.0		0.0	
Inventories:													
Finished goods	1,348,467	6.1	1,062,243	4.4	1,699,754	6.9	1,811,675	7.5	2,167,428	8.9	1,053,000	4.1	
Work-in-process	549,150	2.5	386,700	1.6	409,521	1.7	483,375	2.0	496,500	2.0	255,000	1.0	
Materials and supplies	3,033,917	13.7	3,001,548	12.4	3,255,290	13.2	3,170,754	13.2	2,550,464	10.5	3,967,013	15.5	
Total Inventories	4,931,534	22.3	4,450,491	18.4	5,364,564	21.7	5,465,804	22.7	5,214,392	21.4	5,275,013	20.6	30.8
Deferred income taxes	440,550	2.0	493,050	2.0	796,050	3.2	994,050	4.1	951,488	3.9	951,488	3.7	
Prepaid expenses	76,350	0.3	68,454	0.3	62,517	0.3	83,286	0.3	218,220	0.9	194,735	0.8	
Total Current Assets	12,493,589	56.4	14,552,385	60.3	14,204,318	57.4	14,638,049	60.8	15,072,729	61.9	16,502,142	64.3	72.9
PROPERTY, PLANT AND EQUIPMENT, AT COST:													
Land and Building	10,447,610	47.2	10,621,832	44.0	11,421,392	46.1	11,527,878	47.9	11,540,555	47.4	11,564,268	45.1	
Manufacturing equipment	3,489,845	15.8	3,590,913	14.9	4,125,582	16.7	4,501,364	18.7	4,923,600	20.2	5,451,329	21.2	

Office furniture and equipment	2,177,048	9.8	2,156,771	8.9	2,006,327	8.1	2,133,801	8.9	2,004,740	8.2	2,072,582	8.1	
Automobiles	474,515	2.1	554,291	2.3	589,812	2.4	627,471	2.6	624,156	2.6	588,827	2.3	
Equipment leased to others	302,700	1.4	317,025	1.3	346,350	1.4	412,350	1.7	355,125	1.5	310,875	1.2	
	16,891,716	76.2	17,240,831	71.4	18,489,462	74.7	19,202,864	79.7	19,448,175	79.8	19,987,880	77.9	
Less: Accumulated depreciation	8,516,358	38.4	9,233,250	38.2	10,047,561	40.6	11,333,708	47.1	12,385,041	50.8	12,834,102	50.0	
Net property, plant and equipment	8,375,358	37.8	8,007,581	33.2	8,441,901	34.1	7,869,156	32.7	7,063,134	29.0	7,153,778	27.9	16.3
OTHER ASSETS													
Patents, less accumulated amortization	288,552	1.3	287,015	1.2	283,178	1.1	298,928	1.2	309,965	1.3	319,086	1.2	5.2
Cash surrender value of life insurance	72,464	0.3	75,939	0.3	79,367	0.3	82,739	0.3	86,034	0.4	86,034	0.3	
Other receivables	227,312	1.0	280,469	1.2	321,723	1.3	360,876	1.5	402,131	1.7	402,131	1.6	
Deferred income taxes	547,650	2.5	648,150	2.7	877,650	3.5	834,150	3.5	954,150	3.9	954,150	3.7	
Securities held to maturity	150,819	0.7	299,639	1.2	546,527	2.2		0.0	472,500	1.9	239,583	0.9	
Total other assets	1,286,796	5.8	1,591,211	6.6	2,108,444	8.5	1,576,692	6.5	2,224,779	9.1	2,000,984	7.8	10.9
Total Assets	$22,155,743	100.0	$24,151,176	100.0	$24,754,662	100.0	$24,083,897	100.0	$24,360,642	100.0	$25,656,903	100.0	100.0
Liabilities and Stockholders' Equity													
CURRENT LIABILITIES													
Accounts payable—trade	778,385	3.5	1,053,479	4.4	1,170,801	4.7	1,372,983	5.7	888,152	3.7	1,289,225	5.0	10.2
Accrued compensation and related items	937,001	4.2	1,342,259	5.6	1,116,093	4.5	819,744	3.4	837,300	3.4	969,531	3.8	
Accrued expenses and other liabilities	397,535	1.8	520,025	2.2	1,566,176	6.3	794,744	3.3	643,725	2.7	689,883	2.7	
Unearned income	290,346	1.3	274,334	1.1	281,367	1.1	350,070	1.5	480,752	2.0	505,913	2.0	
Note payable		0.0	35,787	0.1	23,384	0.1	16,697	0.1	6,710	0.0		0.0	12.5

(continues)

Exhibit 9.13 *continued*

	Audited 12/31/95	%	Audited 12/31/96	%	Audited 12/31/97	%	Audited 12/31/98	%	Audited 12/31/99	%	Internal Financials 05/31/00	%	1999-2000 RMA (a) ratios %
Obligation under capital lease —current portion	176,178	0.8	323,513	1.3	250,784	1.0	362,693	1.5	480,591	2.0	526,605	2.1	
Income taxes payable	159,597	0.7	529,302	2.2	82,553	0.3	76,464	0.3	399,128	1.6	475,527	1.9	
Total Current Liabilities	2,739,041	12.4	4,078,697	16.9	4,491,156	18.1	3,793,394	15.8	3,736,356	15.4	4,456,683	17.4	36.1
OBLIGATION UNDER CAPITAL LEASE	8,628,981	38.9	8,305,469	34.4	8,801,765	35.6	8,439,072	35.0	7,958,802	32.8	7,719,261	30.1	7.0
Stockholders' Equity													
Common stock; $1.50 par value 450,000 shares authorized	197,019	0.9	196,869	0.8	189,436	0.8	188,151	0.8	112,176	0.5	187,026	0.7	
Unrealized gain on securities, net of tax	79,371	0.4	69,446	0.3	75,957	0.3	97,895	0.4	54,707	0.2	54,707	0.2	
Retained earnings	10,575,609	47.7	11,575,763	47.9	11,343,407	45.8	11,779,070	48.9	12,643,319	52.1	13,421,627	52.3	
Foreign currency translation adjustments, unrealized	(64,278)	-0.3	(75,066)	-0.3	(147,059)	-0.6	(213,684)	-0.9	(219,717)	-0.9	(182,400)	-0.7	
Total Stockholder's Equity	10,787,721	48.7	11,767,011	48.7	11,461,741	46.3	11,851,431	49.2	12,590,484	51.8	13,480,959	52.5	54.1
Total Liabilities and Stockholders' Equity	$22,155,743	100.0	$24,151,176	100.0	$24,754,662	100.0	$24,083,897	100.0	$24,285,642	100.0	$25,656,903	100.0	100.0

References:

(a) 1999-2000 RMA data for SIC #3829 "Measuring & controlling devices, nec" with revenues between $10-25 million (used with permission). © 2002 by RMA—The Risk Management Association. All rights reserved. No part of this table may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system without permission in writing from RMA—The Risk Management Association. Please refer to *www.rmahq.org* for further warranty, copyright and use of data information.

Exhibit 9.14 Acme Measurement Devices, Inc.—Comparative Income Statements

	Audited 12/31/95	%	Audited 12/31/96	%	Audited 12/31/97	%	Audited 12/31/98	%	Audited 12/31/99	%	LTM as of 05/31/00	%	1999-2000 RMA (a) ratios %
REVENUES													
Equipment	n/a		20,944,452	75.9	21,534,516	75.0	20,289,575	70.2	19,612,049	68.6	20,126,975	70.4	
Parts & repairs	n/a		4,147,502	15.0	4,386,449	15.3	5,469,996	18.9	5,763,689	20.2	5,475,587	19.2	
Training	n/a		843,693	3.1	866,817	3.0	1,011,872	3.5	1,044,042	3.7	917,651	3.2	
Other	n/a		687,122	2.5	751,631	2.6	693,132	2.4	741,018	2.6	698,804	2.4	
Net sales	21,642,206	93.9	26,622,768	96.5	27,539,412	95.9	27,464,574	95.0	27,160,797	95.0	27,219,015	95.2	
Rentals and sales of leased equipment	998,660	4.3	733,155	2.7	947,327	3.3	1,157,432	4.0	1,180,511	4.1	1,087,727	3.8	
Other income (interest income on investments)	410,465	1.8	221,816	0.8	233,999	0.8	299,682	1.0	257,847	0.9	278,936	1.0	
Total Revenue	**$23,051,330**	**100%**	**$27,577,739**	**100%**	**$28,720,737**	**100%**	**$28,921,688**	**100%**	**$28,599,155**	**100%**	**$28,585,677**	**100%**	**100%**
COSTS AND EXPENSES													
Cost of Goods Sold													
Materials	6,587,496	28.6	8,408,381	30.5	9,383,924	32.7	8,565,641	29.6	7,738,926	27.1	7,403,193	25.9	
Direct Labor	1,217,618	5.3	1,418,480	5.1	1,592,294	5.5	2,176,301	7.5	2,025,638	7.1	2,063,087	7.2	
Indirect Labor	661,967	2.9	674,331	2.4	834,713	2.9	1,664,589	5.8	1,565,958	5.5	1,502,237	5.3	
Payroll Taxes	140,591	0.6	155,354	0.6	180,288	0.6	285,992	1.0	269,114	0.9	267,467	0.9	
Profit Sharing	69,168	0.3	70,542	0.3	60,090	0.2	77,039	0.3	124,629	0.4	143,379	0.5	
Plant Supplies	225,365	1.0	248,571	0.9	307,887	1.1	484,310	1.7	308,285	1.1	350,028	1.2	

(continues)

Exhibit 9.14 *continued*

	Audited 12/31/95	%	Audited 12/31/96	%	Audited 12/31/97	%	Audited 12/31/98	%	Audited 12/31/99	%	LTM as of 05/31/00	%	1999-2000 RMA (a) ratios %
Repairs and maintenance	123,072	0.5	156,285	0.6	164,664	0.6	179,094	0.6	165,446	0.6	160,910	0.6	
Utilities	143,438	0.6	160,934	0.6	149,792	0.5	167,726	0.6	156,276	0.5	157,659	0.6	
Freight	88,169	0.4	92,336	0.3	127,689	0.4	131,802	0.5	107,126	0.4	126,629	0.4	
Insurance General	346,680	1.5	355,517	1.3	414,806	1.4	475,212	1.6	479,000	1.7	470,618	1.6	
Other Taxes	73,955	0.3	81,126	0.3	79,473	0.3	82,893	0.3	83,883	0.3	83,883	0.3	
Depreciation and amortization	541,712	2.4	527,657	1.9	555,750	1.9	615,084	2.1	620,613	2.2	677,382	2.4	
Telephone	22,346	0.1	18,252	0.1	25,754	0.1	24,588	0.1	16,016	0.1	16,170	0.1	
Travel	—	0.0	15,602	0.1	10,365	0.0	77,424	0.3	35,832	0.1	33,528	0.1	
Employment - Ads/Relocate	—	0.0	6,240	0.0	30,404	0.1	26,567	0.1	15,207	0.1	27,507	0.1	
Outside Labor/Services	—	0.0	95,679	0.3	204,366	0.7	126,710	0.4	35,423	0.1	45,084	0.2	
Miscellaneous Expenses	162,105	0.7	32,258	0.1	453,392	1.6	(301,626)	–1.0	106,116	0.4	50,687	0.2	
Allocated Information Resources	45,360	0.2	107,880	0.4	145,800	0.5	103,508	0.4	99,384	0.3	87,234	0.3	
Allocated Building and Grounds	(322,293)	–1.4	(331,113)	–1.2	(355,931)	–1.2	(379,026)	–1.3	(324,569)	–1.1	(320,669)	–1.1	
Total Cost of Goods Sold	**10,126,745**	**43.9**	**12,294,308**	**44.6**	**14,365,517**	**50.0**	**14,583,824**	**50.4**	**13,628,300**	**47.7**	**13,346,010**	**46.7**	**61.5**
SELLING, GENERAL AND ADMINISTRATIVE EXPENSES (SG&A)													
Salaries and wages	5,858,048	25.4	6,560,538	23.8	6,695,264	23.3	6,736,661	23.3	6,303,152	22.0	6,210,704	21.7	
Sales commissions	178,554	0.8	77,873	0.3	86,157	0.3	68,814	0.2	75,711	0.3	51,453	0.2	
Payroll taxes	430,944	1.9	482,627	1.8	485,507	1.7	497,559	1.7	478,122	1.7	456,711	1.6	
Profit sharing & 401-K	221,319	1.0	329,345	1.2	208,257	0.7	245,036	0.8	239,966	0.8	230,490	0.8	
Outside labor	—	0.0	402,126	1.5	386,390	1.3	411,935	1.4	327,800	1.1	270,027	0.9	
Employment ads	—	0.0	31,179	0.1	64,275	0.2	86,141	0.3	54,054	0.2	68,030	0.2	
Other taxes and licenses	48,815	0.2	192,051	0.7	51,030	0.2	119,394	0.4	42,744	0.1	33,683	0.1	
Rent	186,560	0.8	184,752	0.7	187,041	0.7	195,224	0.7	193,418	0.7	228,158	0.8	

Travel and entertainment	584,660	2.5	598,113	2.2	659,990	2.3	580,998	2.0	379,589	1.3	434,316	1.5	
Insurance	296,900	1.3	320,939	1.2	316,590	1.1	472,124	1.6	424,731	1.5	393,023	1.4	
Telephone	140,114	0.6	148,116	0.5	182,774	0.6	187,748	0.6	136,604	0.5	136,541	0.5	
Patents and attorney	157,319	0.7	192,213	0.7	305,966	1.1	103,494	0.4	118,974	0.4	116,982	0.4	
Legal and consulting	99,702	0.4	100,074	0.4	181,769	0.6	27,125	0.1	73,638	0.3	67,754	0.2	
Audit and accounting	88,139	0.4	140,244	0.5	164,247	0.6	136,682	0.5	174,654	0.6	180,756	0.6	
Directors and shareholders meetings	15,000	0.1	15,498	0.1	21,000	0.1	21,750	0.1	15,750	0.1	8,250	0.0	
Advertising	93,845	0.4	102,905	0.4	128,559	0.4	118,071	0.4	108,336	0.4	123,993	0.4	
Meetings and conferences	36,371	0.2	19,736	0.1	29,496	0.1	16,289	0.1	26,147	0.1	17,142	0.1	
Printing and supplies	307,724	1.3	256,358	0.9	394,443	1.4	379,310	1.3	291,671	1.0	316,965	1.1	
Trade shows	—	0.0	—	0.0	—	0.0	50,937	0.2	51,159	0.2	21,776	0.1	
Royalty	—	0.0	—	0.0	—	0.0	43,592	0.2	151,676	0.5	72,032	0.3	
Engineering design services	134,492	0.6	102,521	0.4	138,608	0.5	108,725	0.4	94,902	0.3	94,902	0.3	
Freight and postage	220,454	1.0	271,739	1.0	350,205	1.2	297,432	1.0	270,537	0.9	272,349	1.0	
Dues and subscriptions	53,454	0.2	59,889	0.2	67,203	0.2	69,504	0.2	56,307	0.2	46,017	0.2	
Equipment and building maintenance	91,733	0.4	59,183	0.2	64,577	0.2	44,459	0.2	50,054	0.2	56,735	0.2	
Depreciation and amortization	626,759	2.7	686,661	2.5	729,153	2.5	747,125	2.6	785,616	2.7	791,096	2.8	
Miscellaneous	520,712	2.3	244,493	0.9	291,972	1.0	252,881	0.9	177,398	0.6	229,301	0.8	
Allocated information resources costs	(45,360)	–0.2	(107,880)	–0.4	(145,800)	–0.5	(103,508)	–0.4	(99,384)	–0.3	(87,234)	–0.3	
Allocated building and grounds costs	322,293	1.4	331,112	1.2	355,931	1.2	379,026	1.3	324,569	1.1	320,669	1.1	
Total SG&A	**10,668,543**	**46.3**	**11,802,399**	**42.8**	**12,400,599**	**43.2**	**12,294,521**	**42.5**	**11,327,889**	**39.6**	**11,162,615**	**39.5**	**36.5**
Interest Expense	1,535,303	6.7	1,532,672	5.6	1,516,313	5.3	1,596,369	5.5	1,533,153	5.4	1,510,803	5.3	0.6
Other Expenses (Foreign currency translation)	402,113	1.7	224,084	0.8	162,449	0.6	76,034	0.3	199,362	0.7	213,548	0.7	
TOTAL COSTS AND EXPENSES	22,732,703	98.6	25,853,462	93.7	28,444,877	99.0	28,550,747	98.7	26,688,704	93.3	26,232,975	91.8	97.9

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Exhibit 9.14 *continued*

	Audited 12/31/95	%	Audited 12/31/96	%	Audited 12/31/97	%	Audited 12/31/98	%	Audited 12/31/99	%	LTM as of 05/31/00	%	1999-2000 RMA (a) ratios %
INCOME BEFORE TAXES	**318,627**	**1.4**	**1,724,277**	**6.3**	**275,861**	**1.0**	**370,941**	**1.3**	**1,910,451**	**6.7**	**2,352,702**	**8.2**	**1.5**
PROVISION FOR INCOME TAXES													
Current:													
Federal	229,500	1.0	506,400	1.8	213,867	0.7	(167,937)	–0.6	679,910	2.4	n/a		
State	45,150	0.2	112,800	0.4	40,620	0.1	(25,560)	–0.1	111,735	0.4	n/a		
Deferred:													
Federal	(322,083)	–1.4	(141,764)	–0.5	(496,500)	–1.7	(141,000)	–0.5	(48,563)	–0.2	n/a		
State	(16,500)	–0.1	(10,500)	–0.0	(36,000)	–0.1	(13,500)	–0.0	(3,000)	–0.0	n/a		
Total	(63,933)	–0.3	466,937	1.7	(278,013)	–1.0	(347,997)	–1.2	740,082	2.6	886,632	3.1	
NET INCOME	**$382,560**	**1.7**	**$1,257,341**	**4.6**	**$553,874**	**1.9**	**$718,938**	**2.5**	**$1,170,369**	**4.1**	**$1,466,070**	**5.1**	
Operating EBIT	2,256,042	9.8	3,481,032	12.6	1,954,622	6.8	2,043,344	7.1	3,642,966	12.7	4,077,053	14.3	
Total Depreciation & Amortization	1,152,008	5.0	1,214,318	4.4	1,284,903	4.5	1,453,905	5.0	1,406,625	4.9	1,468,874	5.1	3.3
EBITDA	3,408,050	14.8	4,695,350	17.0	3,239,525	11.3	3,497,249	12.1	5,049,591	17.7	5,545,926	19.4	

References:

(a) 1999-2000 RMA data for SIC #3829 "Measuring & controlling devices, nec" with revenues between $10-25 million (used with permission). © 2002 by RMA—The Risk Management Association. All rights reserved. No part of this table may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system without permission in writing from RMA—The Risk Management Association. Please refer to *www.rmahq.org* for further warranty, copyright and use of data information.

Exhibit 9.15 Acme Measurement Devices, Inc.—Statements of Cash Flows

	12/31/94	Audited 12/31/95	Audited 12/31/96	Audited 12/31/97	Audited 12/31/98	Audited 12/31/99
Operating Cash Flow						
Net profit (current earnings)		382,560	1,257,341	553,874	718,938	1,170,369
+ depreciation & amortization		1,152,008	1,214,318	1,284,903	1,453,905	1,406,625
- increase/+decrease in current assets (except cash)		(722,286)	(610,095)	(2,257,016)	961,022	172,991
+ increase/-decrease of accounts payable and other payable		(432,770)	1,156,535	503,529	(1,125,204)	136,502
Total Operating Cash Flow		379,512	3,018,098	85,290	2,008,661	2,886,486
Investing Cash Flow						
-increase/+decrease in other assets (including long term investments)		(789,107)	(818,096)	(1,036,950)	(846,470)	(553,260)
-increase/+decrease of fixed assets (cost)		1,154,858	(382,764)	371,456	822,722	(763,439)
Total Investing Cash Flow		365,751	(1,200,860)	(665,495)	(23,748)	(1,316,699)
Financing Cash Flow						
+ increase/-decrease of payments under capital lease		(223,523)	(422,265)	(490,925)	(438,935)	(596,342)
+ increase/-decrease of shareholders' equity (shares redeemed, etc.)		(753,863)	24,537	(616,623)	(103,100)	(83,112)
Total Financing Cash Flow		(977,385)	(397,728)	(1,107,548)	(542,034)	(679,454)
Effect of exchange rate changes		(43,178)	(10,788)	(44,508)	(66,626)	(6,033)
Cash increase (decrease)		(275,300)	1,408,722	(1,732,260)	1,376,253	884,301
Cash beginning of period		3,575,126	3,299,826	4,708,548	2,976,288	4,352,541
Cash the end of the period	3,575,126	3,299,826	4,708,548	2,976,288	4,352,541	5,236,842

Exhibit 9.16 Acme Measurement Devices, Inc.—Debt-Free Working Capital Computation

Industry Debt-Free Working Capital Requirements (1)

	SIC # 3829 Manufacturing - Measuring & Controlling Devices	
	All	**$10 MM - $25 MM**
As a % of Total Assets		
Current Assets	70.0%	72.9%
Less: Current Liabilities	44.7%	36.1%
Working Capital	25.3%	36.8%
Working Capital	25.3%	36.8%
Plus: Notes Payable—Short-term	14.9%	11.8%
Plus: Current Mat.—L.T.D.	4.7%	2.3%
Debt-Free Working Capital (DFWC)	44.9%	50.9%
Debt-Free Working Capital	44.9%	50.9%
Times: Total Assets ($000)	$1,297,482	$189,572
Debt-Free Working Capital ($000)	$ 582,569	$ 96,492
Debt-Free Working Capital ($000)	$ 582,569	$ 96,492
Divided by: Total Sales ($000)	$1,573,747	$265,456
DFWC/Sales	**37.0%**	**36.3%**

Subject Historical Debt-Free Working Capital Requirements

	DFWC for the Company	**DFWC/Sales**
1997, 1998 Average	$6,270,007	21.9%
Most Recent Year	$7,076,240	24.8%
Concluded Debt-Free Working Capital Requirements (2)		25.0%

Notes:
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(2) We have relied on Acme's most recent year data.

Exhibit 9.17 Acme Measurement Devices, Inc.—Income Capitalization Method

	Audited 12/31/96	%	Audited 12/31/97	%	Audited 12/31/98	%	Audited 12/31/99	%	LTM as of 05/31/00	%	1996-2000 Average		Normalized Scenario	
Total Revenue	27,577,739	100.0	28,720,737	100.0	28,921,688	100.0	28,599,155	100.0	28,585,677	100.0	28,480,999	100.0	28,000,000	100.0
Reported Operating Income (Loss) (EBIT)	3,481,032	12.6	1,954,622	6.8	2,043,344	7.1	3,642,966	12.7	$ 4,077,053	14.3	3,039,803	10.7	n/a	
Adjustments to operating expenses														
Minus: Other income	(221,816)	-0.8	(233,999)	-0.8	(299,682)	-1.0	(257,847)	-0.9	(278,936)	-1.0	n/a		n/a	
Plus: Oven royalty	—	0.0	—	0.0	43,592	0.2	151,676	0.5	72,032	0.3	n/a		n/a	
Plus: Patents and attorney	72,213	0.3	185,966	0.6	—	0.0	—	0.0	—	0.0	n/a		n/a	
Plus: Legal expenses	—	0.0	106,769	0.4	(47,876)	-0.2	—	0.0	—	0.0	n/a		n/a	
	(149,603)	-0.5	58,736	0.2	(303,966)	-1.1	(106,172)	-0.4	(278,936)	-1.0	n/a		n/a	
Adjusted Operating Income (EBIT)	3,331,430	12.1	2,013,357	7.0	1,739,378	6.0	3,536,795	12.4	3,798,117	13.3	2,883,815	10.1	2,800,000	10.0
Minus: Taxes on EBIT 40%	(1,332,572)	-4.8	(805,343)	-2.8	(695,751)	-2.4	(1,414,718)	-4.9	(1,519,247)	-5.3	(1,153,526)	-4.1	(1,120,000)	-4.0
Plus: Depreciation & Amortization	1,214,318	4.4	1,284,903	4.5	1,453,905	5.0	1,406,625	4.9	1,468,874	5.1	1,365,725	4.8	1,470,000	5.3
Minus: Capital Expenditures	(818,096)	-3.0	(1,036,950)	-3.6	(875,750)	-3.0	(553,260)	-1.9	(553,260)	-1.9	(767,463)	-2.7	(855,000)	-3.1
Minus increases/ Plus decreases in Working Capital	654,300	2.4	(1,511,030)	-5.3	(164,597)	-0.6	256,698	0.9	(723,935)	-2.5	(297,713)	-1.0	146,419	0.5
Equals: Net Cash Flow to overall invested capital	3,049,380	11.1	(55,062)	-0.2	1,457,186	5.0	3,232,140	11.3	2,470,549	8.6	2,030,838	7.1	2,441,419	8.7
												Round:	2,440,000	

(continues)

Exhibit 9.17 *continued*

Calculation of value	
Net Cash Flow to overall invested capital	2,440,000
Debt-Free Net Cash Flow Capitalization Rate	12.00%
MVIC =	20,333,333
MVIC rounded =	20,300,000
– Debt (Total obligation under capital lease)	-8,245,866
= 100% Minority equity, marketable	12,054,134
– Marketability Discount -35%	
= 100% Equity value, on a minority interest	7,835,187
+ nonoperating assets discounted by 41.5%	2,408,491
= 100% Equity minority nonmarketable	**10,243,678**

Exhibit 9.18 Acme Measurement Devices, Inc.—Discount Capitalization Rate Analysis

Long-term U.S. Treasury Bond Yield (1)	6.21%
Average of excess return on S&P 500 over long-term Treasury Bond income returns, 1926-1999 (2) (Large Company Stocks Equity Risk Premium)	8.10%
Beta (3)	0.683
Expected excess return on equity, large company stock	5.53%
Average of excess return of "smallest decile" public company stocks over S&P 500, 1926-1999 (4)	4.50%
Equals, expected return on average "smallest decile" public company	16.24%
(Also equals the equity net cash flow discount rate for an average "smallest decile" public company.)	
Adjustment for Risk Factors Specific to ACME (5)	4.00%
Equals, Equity Net Cash Flow Discount Rate Specific to ACME	20.24%
Baa debt borrowing rate as of June 16, 2000 (6)	8.36%
Ratio of normal level of equity to total invested capital (7)	64.00%
Preliminary WACC (8)	14.76%
Less: ACME's Assumed Average Long-Term Growth (9)	3.00%
Equals Debt-Free Net Cash Flow Capitalization Rate	11.76%
Rounded	12.00%

NOTES:
(1) Source: 20-year U.S. Government Bond; Federal Reserve Statistical Release.
(2) Source: Stocks, Bonds, Bills and Inflation, 2000 Yearbook, Ibbotson Associates ("SBBI - 2000").
(3) Beta re-levered with the capital structure of the Company presented on point (7) below. Source: 2000 Cost of Capital Quarterly; median Adj, un-levered beta for SIC 3829.
(4) Source: 2000 Cost SBBI - 2000. The average "small" public company earning this excess return is represented by companies the size of the bottom 10 percent of New York Stock Exchange companies.
(5) Based on the financial data supplied and valuation issues discussed in this report.
(6) Source: Federal Reserve Statistical Release, June 16, 2000.
(7) Source: Based on the Company's level of indebtdeness (The Obligation under Capital Lease was considered debt).
(8) Also known as the Weighted Average Cost of Capital, or WACC. Assumes a 40 percent tax rate.
(9) The estimated average annual nominal growth rate is approximately 3 percent which is equal to the estimated inflation as described in the "General Economic Overview" section of the report.

Exhibit 9.19 Acme Measurement Devices, Inc.—Transaction Data

	Date Announced	Date Effective	Target Name	Target Business Description	Acquiror Name	% of Shares Acq.	Value of Trans. (a) ($mil)	Target Net Sales LTM ($mil)	Target Total Assets ($mil)	Target Dep. and Amort. LTM ($mil)	Target Operating Income EBIT LTM ($mil)	Value of Trans./ Target Net Sales LTM (times)	EBIT/ Net Sales (%)	Value of Trans./ Target Operating Income EBIT LTM (times)	Target Primary SIC Code
1	09/15/1995	01/11/1996	Data Measurement Corp	Mnfr measurement systems	Measurex Corp	100.00	32.2	27.8	23.7	0.4	2.3	1.16	8.27%	14.02	3829
2	09/09/1996	10/03/1996	Mundix Control Systems Inc	Mnfr measuring devices	Sytron Inc	100.00	1.5	1.1				1.36			3829
3	07/01/1997	07/01/1997	NDC Systems	Mnfr gauging equip	Fairey Group PLC	100.00	30.0	24.2			2.5	1.24	10.33%	12.00	3829
4	07/31/1997	08/29/1997	Gems Sensors	Mnfr measuring devices	Danaher Corp	100.00	85.0	75.0				1.13			3829
5	02/17/1998	02/17/1998	Waekon Industries Inc	Mnfr testing equipment	Hickok Inc	100.00	1.7	5.0	1.4	0.1	0.4	0.33	8.00%	4.13	3829
6	06/03/1998	08/05/1998	Satec Systems Inc	Mnfr testing equipment	Instron Corp	100.00	12.8	18.0				0.71			3829
7	05/04/1998	05/04/1998	American Meter Co.	Mnfr industrial instruments for measurement	Marcum Natural Gas Services Inc	100.00	3.3	4.8				0.69			3829
8	07/08/1998	07/08/1998	Atlantic Precision Products	Mnfr precision eqmnt component	Allied Devices Corp	100.00	13.8	10.0				1.38			3829
9	12/08/1998	12/08/1998	AEA Technology PLC	Mnfr radiation detection, measuring and protection eq.	Packard Bioscience Co.	100.00	11.4	14.4				0.79			3826
10	06/30/1999	07/08/1999	PK Technology	Mnfr test,measurement equip	GN Nettest (GN Great Nordic)	100.00	43.0	32.0				1.34			3829
11	01/31/2000	05/03/2000	Metrika Systems Corp	Mnfr measurement technologies	Thermo Instrument Systems Inc	100.00	14.2	72.8	112.0	2.6	6.4	0.19	8.79%	2.21	3829
					Median—All transactions		13.8	18.0				1.13		8.06	
					Range: high		85.0	75.0				1.38		14.02	
					low		1.5	1.1				0.19		2.21	

CHAPTER 10

Business Valuation Standards

HISTORY OF VALUATION STANDARDS

The history of valuation standards has both a long-term and a short-term focus. The concept of establishing value is a fundamental premise of commerce. It is the basis upon which goods and services are exchanged. Estimates of value have formed the basis for transactions in commerce since ancient times. Yet it is only since the early 1980s that the business valuation/appraisal profession as we know it has evolved.

In the early years of the business valuation profession, Mr. Ray Miles of the Institute of Business Appraisers and Dr. Shannon Pratt of Willamette Management Associates were among the first to compile the body of business valuation knowledge into a coherent form. Miles's book, *Basic Business Appraisal*, was one of the earliest texts on the subject. Pratt's book, *Valuing a Business*, was first published in 1981, when business appraising as we know it was still in its infancy. Since the publication of these two seminal texts, a host of articles, newsletters, and books has been published on a variety of valuation topics that have added to the body of knowledge about valuation theory. The evolution of business valuation theory has led to an evolution in the standards that govern the profession.

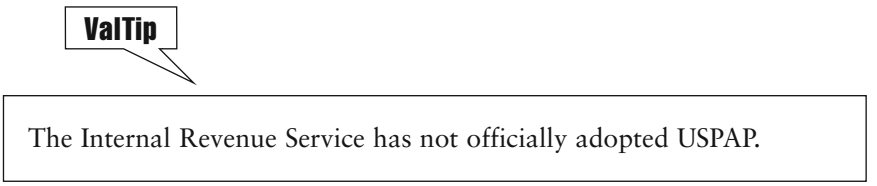
Ironically, the event which triggered the creation of national business valuation standards, was not related to business valuation but was a real estate appraisal scandal. During the savings and loan (S&L) crisis of the mid- and late 1980s, S&L's came under congressional scrutiny for having made extensive questionable loans to entities based on appraisals prepared by real estate appraisers. Many of these appraisals turned out to be much higher than the realizable value of the loans against the property, causing the Savings and Loans to have substantial losses when the loans defaulted.

The Appraisal Foundation, a private nonprofit educational organization, was created in 1987 to address problems in the appraisal industry. Led by a group of entities consisting primarily of governmental agencies and real estate appraisal groups, the Foundation adopted the Uniform Standards of Professional Appraisal Practice (USPAP) on January 30, 1989. USPAP is recognized throughout the United States as the generally accepted standards of professional appraisal practice and will be the primary focus of this chapter.

GOVERNMENT ACTION

The Financial Institution Reform, Recovery, and Enforcement Act (FIRREA) in the late 1980s adopted USPAP as the appraisal standard to be followed for specific federally related transactions. As a result, USPAP must be followed for transactions that come under the authority of these federal agencies:

- Federal Reserve Board
- Federal Deposit Insurance Corporation
- Office of the Comptroller of the Currency
- Office of Thrift Supervision
- National Credit Union Administration



The Appraisal Foundation has a board of trustees and two distinct operating boards, the Appraiser Qualifications Board and the Appraisal Standards Board.

The function of the Appraiser Qualifications Board is to establish qualifications for state licensing of appraisers. During the early 1990s, the qualifications were established for state licensing of real estate appraisers, and these qualifications were adopted across the country. During the late 1990s, the Appraiser Qualifications Board considered establishing qualifications for state licensing of personal property appraisers. Consideration also has been given to state licensing of business valuation appraisers, but there has been considerable opposition in the business valuation community. It does not appear that state licensing of business valuation appraisers will occur in the foreseeable future.

The function of the Appraisal Standards Board is to establish standards under which appraisers will conduct and report their work. The Appraisal Standards Board was formed in 1989 as a successor organization to the Ad Hoc Committee on Uniform Standards that originally developed the USPAP standards in 1986–87. The Appraisal Standards Board is continually reviewing and revising the USPAP standards. It is fair to say that these standards form the foundation of appraisal practice.

One of the difficulties with USPAP is that they are an attempt to consolidate the standards for three separate and distinct disciplines of appraising into one set of uniform standards. Real estate valuation, personal property valuation, and business valuation each has its own idiosyncrasies.

The compromises in the USPAP standards reflect the difficulties in trying to force standards for each of these disciplines into one document.

However, although there are common rules, the specific standards for each appraisal discipline are applicable only to that discipline. For example, standard 2, Real Property Appraisal Reporting, is applicable only to real estate and not personal property or business valuation.

ValTip

Terminology used in these standards is not uniform across the professions doing appraising work. For example, USPAP Standard 3 discusses the "review" of another appraiser's work. To certified public accountants doing business valuation, the term "review" carries a meaning that is unique to the accounting profession and represents a level of service related to financial statements.

In an attempt to bring some uniformity to business appraising terminology, a task force was formed to develop an *International Glossary of Business Valuation Terms (International Glossary)*. The task force consisted of representatives of the major North American organizations involved in business appraising. These organizations included the American Institute of Certified Public Accountants (AICPA), the American Society of Appraisers (ASA), the Institute of Business Appraisers (IBA), the National Association of Certified Valuation Analysts (NACVA), and the Canadian Institute of Chartered Business Valuators (CICBV). The *International Glossary* is presented in Chapter 1 of this book.

It is important to note that many of the terms and definitions in the *International Glossary* are not included in the definitions section of USPAP and vice versa. The Appraisal Foundation has not adopted the *International Glossary*, and there are some differences in definitions between common terms. Analysts are encouraged to become familiar with both sets of definitions.

ORGANIZATION OF THE USPAP STANDARDS

USPAP consists of 10 standards, with supplementary information providing explanation, clarification and guidance. The introductory section of the standards includes definitions, a preamble, and five overriding rules of conduct. These rules cover ethics, competency, departure, the jurisdictional exception, and supplemental standards. In addition to the standards and the rules, the USPAP standards include Statements on Appraisal Standards which have the full weight of a Standards Rule. They also include Advisory Opinions that provide supplemental guidance but do not establish new standards or interpret existing standards.

The USPAP standards cover all three disciplines of appraising. Standards 1 through 6 cover real estate, Standards 3, 6, 7, and 8 cover personal property, and Standards 3, 9, and 10 cover businesses and intangible assets.

BUSINESS VALUATION STANDARDS

ValTip

The pertinent sections of USPAP for the business appraiser include the preamble, the ethics rule, the competency rule, the departure rule, the jurisdictional exception, and the supplemental standards. Standard 9 covers development of a business appraisal, and Standard 10 covers reporting. (Standard 3, appraisal review, effective 1/03.)

The following is a summary of the introductory sections of the Uniform Standards of Professional Appraisal Practice (2003) (used with permission).

Preamble

The preamble gives the overview of the standards and their application to the appraisal process.

Ethics Rule

The ethics rule consists of four parts including Conduct, Management, Confidentiality, and Record Keeping.

Conduct

The conduct section of the ethics rule suggests that the appraiser ". . . must perform assignments ethically and competently." There must be no criminal conduct by the appraiser, and assignments "must be performed with impartiality, objectivity, and independence, and without accommodation of personal interests."

Management

The management section of the ethics rule deals with the prohibition against payment of undisclosed fees, the performance of appraisals contingent upon the reporting of a predetermined value or the attainment of a stipulated result. It also prohibits advertising that is false and misleading.

Confidentiality

The confidentiality section of the ethics rule covers the protection of the appraiser-client relationship. It suggests that the appraiser must "act in good faith with regard to the legitimate interests of the client in the use of confidential information." It also prohibits the appraiser from disclosing any confidential client information except as required by due process of law or a duly authorized peer review committee. The appraiser must also be aware of, and comply with, all confidentiality and privacy laws and regulations applicable in an assignment.

Record Keeping

The record-keeping section of the ethics rule requires that the appraiser "prepare a workfile" for each appraisal engagement and specifies that the workfile should include certain information including the name of the client and identification of any intended users, a copy of any written report, a summary of any oral testimony, and other documentation sufficient to support the appraiser's work and conclusions of value. This section further requires that the appraiser retain the workfile for a period of "five (5) years after preparation or at least two (2) years after final disposition of any judicial proceeding," whichever is later.

Note: Certain engagements such as deal pricing and litigation, require the analyst or appraiser to sign a nondisclosure agreement. The analyst must be comfortable that adherence to the nondisclosure agreement does not violate the record-keeping standards of USPAP.

Competency Rule

The competency rule requires that the appraiser "have the knowledge and experience to complete the assignment competently." If the appraiser does not have the knowledge or experience, the appraiser must disclose this lack of knowledge to the client before accepting the assignment, take all necessary steps to complete the assignment competently, and describe the lack of knowledge and the work done to complete the assignment competently in the report. Often the appraiser may have to use the services of another qualified appraiser if the assignment requires experience or knowledge the appraiser does not have.

Departure Rule

The departure rule "permits exceptions from sections of the Uniform Standards that are classified as specific requirements rather than binding requirements." When invoking the departure provision, the appraiser has moved from the complete appraisal into the limited appraisal and must take care that the appraisal process performed "is not so limited that the results of the assignment are no longer credible." Based primarily on venue and client needs, a limited appraisal allows for a conclusion of value without performing all the steps necessary for a complete appraisal.

Jurisdictional Exception Rule

The jurisdictional exception rule provides that if any part of the Uniform Standards is contrary to the law or public policy in any jurisdiction, that portion of the standards shall "be void and of no force or effect in that jurisdiction."

Supplemental Standards Rule

This rule suggests that the Uniform Standards apply to all appraisal practice but that supplemental standards may be issued that are applicable to assignments done "for specific purposes or property types." It is the appraiser's obligation to determine whether any of the published supplemental standards "apply to the assignment being considered."

Following the general, cross-discipline rules, the next sections pertinent only to business valuation are Standards 9 and 10 (used with permission).

Standard 9

USPAP Standard 9 covers development of the business appraisal. It requires the appraiser to take all the steps necessary to produce a credible appraisal. The five explanatory rules under Standard 9 are summarized here.

Rule 9-1. Rule 9-1 requires the appraiser to "be aware of, understand, and correctly employ those recognized methods and procedures that are necessary to produce a credible appraisal," "not commit a substantial error of omission or commission that significantly affects the appraisal," and "not render appraisal services in a careless or negligent manner."

Essentially, this rule charges the appraiser with the responsibility to know and to correctly employ the generally accepted appraisal techniques for the type of engagement being undertaken.

Rule 9-2. Rule 9-2 requires the appraiser to identify:

(a) The client and any other intended users of the appraisal and the client's intended use of the appraiser's opinions and conclusions
(b) The purpose of the assignment, including the standard of value to be developed
(c) The effective date of the appraisal
(d) The business enterprises, assets, or equity to be valued
(e) The scope of work that will be necessary to complete the assignment
(f) Any extraordinary assumptions in the assignment
(g) Any hypothetical conditions necessary in the assignment

Rule 9-3. Rule 9-3 asks the appraiser to consider the liquidation value of the enterprise and to consider that liquidation value may be greater than the value in continued operation (as a going concern).

Rule 9-4. Rule 9-4 requires the appraiser to use one or more of the approaches that apply to the specific appraisal assignment. It further requires the appraiser, where relevant, to include in the analysis data regarding:

(a) The nature and history of the business;
(b) Financial and economic conditions affecting the business enterprise, its industry, and the general economy;
(c) Past results, current operations, and future prospects of the business enterprise;
(d) Past sales of capital stock or other ownership interests in the business enterprise being appraised;
(e) Sales of similar businesses or capital stock of publicly held similar businesses;
(f) Prices, terms, and conditions affecting past sales of similar business equity; and
(g) Economic benefit of intangible assets.

This rule requires the appraiser to consider issues very similar to those required by I.R.S. Revenue Ruling 59-60.

Rule 9-5. Rule 9-5 requires the appraiser to reconcile the values computed using the various approaches selected in the assignment.

Standard 10

Just as Standard 9 sets forth the requirements for developing an appraisal, Standard 10 sets forth the requirements for reporting on the appraisal assignment. The standard emphasizes that the appraiser has an obligation to communicate the results of the appraisal in a "manner that is not misleading."

The four rules under Standard 10 are summarized next.

Rule 10-1. Written or oral appraisal reports must:

(a) Clearly and accurately set forth the appraisal in a manner that will not be misleading
(b) Contain sufficient information to enable the intended user(s) to understand it
(c) Disclose any extraordinary assumption or hypothetical condition that directly affects the appraisal and value

Rule 10-2. Written valuation reports must either be an Appraisal Report or a Restricted Use Appraisal Report. Rule 10-2(a) is the rule that sets forth the minimum disclosure requirements for an Appraisal Report. Rule 10-2(b) is the rule that sets forth the minimum disclosure requirements for a Restricted Use Appraisal Report.

(a) The Appraisal Report must be consistent with the intended use of the appraisal and

    (i) State the identity of the client and any intended users
    (ii) State the intended use of the appraisal
    (iii) Summarize information sufficient to identify the entity or asset appraised
    (iv) Identify what, if any, elements of ownership control are contained in the interest being appraised
    (v) State the purpose of the appraisal, including the standard of value
    (vi) State the effective date of the appraisal and the report date
    (vii) Summarize the scope of the work done to develop the appraisal
    (viii) State all assumptions and limiting conditions that affect the appraisal
    (ix) Summarize the information analyzed, the appraisal procedures followed and the reasoning used in the appraisal
    (x) Explain any departures from Standard 9 and the reasons for not utilizing the customary valuation approaches
    (xi) Include a certification signed by the appraiser as described by Rule 10-3

(b) The Restricted Use Appraisal Report must be identified for client use only and must:
    (i) State the identity of the client
    (ii) State the intended use of the appraisal
    (iii) Identify the asset appraised
    (iv) Identify the business interest being valued and the elements of control it contains
    (v) State the purpose of the appraisal and the standard of value
    (vi) State the effective date of the appraisal and the report date
    (vii) Describe the scope of the work performed or refer to data in the workfile that describes the scope
    (viii) State all assumptions, hypothetical, and limiting conditions
    (ix) State the appraisal procedures followed and the conclusion reached
    (x) Explain any departures from Standard 9 and state that this report is restricted to client use only and cannot be understood without access to the data in the appraiser's workfile
    (xi) Include a certification signed by the appraiser according to Rule 10-3

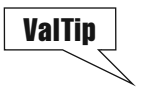
Rule 10-3. Each written business appraisal report must contain a signed certification similar in content to the following:

I certify that, to the best of my knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- I have no (or the specified) present or prospective future interest in the property that is the subject of this report, and I have no (or the specified) personal interest with respect to the parties involved.
- I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- My engagement in this assignment was not contingent on developing or reporting predetermined results.
- My compensation for completing this assignment is not contingent on the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- My analyses, opinions and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.
- No one provided significant business valuation assistance to the person signing this certification. (If there are exceptions, the name of each and the significant business valuation assistance must be stated.)

This certification represents a reaffirmation that the appraiser performed the work in conformity with the requirements set forth in Standard 9.

Rule 10-4. An oral business appraisal report must, at a minimum, address the substantive matters set forth in Standards Rule 10-2(a).



For CPAs, the word "certify" has special meaning concerning attestation of financial information. Some CPAs will add a sentence in their report that they are not certifying any financial information but are adhering to the appraisal certification requirements of USPAP.

Summary of USPAP

Uniform Standards 9 and 10 and their related rules set forth the minimum standards that should be followed; they represent the mainstream of business valuation standards but are not intended to be all-inclusive.

Although many federal agencies have adopted USPAP as the standard for their appraisal reports, as previously stated, one of the largest users of valuation reports, the Internal Revenue Service (IRS), has not adopted these standards. The IRS has chosen to issue its own guidelines for business valuation, as described later in this chapter.

OTHER BUSINESS VALUATION STANDARDS AND CREDENTIALS

While the Appraisal Standards Board of the Appraisal Foundation was among the first to issue business valuation standards, other organizations either had or would develop their own standards and/or valuation guidelines. Among these groups are the American Society of Appraisers, the Institute of Business Appraisers, the National Association of Certified Valuation Analysts, the Canadian Institute of Chartered Business Valuators, the American Institute of Certified Public Accountants, the New Zealand Institute of Chartered Accountants, and the Internal Revenue Service.

A brief summary of the standards and credential activity of each organization follows.

American Society of Appraisers

The American Society of Appraisers, a multidiscipline organization, was one of the early participants in formation of the Appraisal Foundation. Although its roots are primarily in the real estate appraising industry, it offers credentials in personal property appraising and in business valuation, which is its fastest-growing segment.

Membership in the American Society of Appraisers is available as a candidate member or as a credentialed member. Credentials are available upon passing an examination and having two appraisal reports approved by the credentials committee. Two credentials are available in each discipline: the Accredited Senior Appraiser (ASA) and the Accredited Member (AM). The difference between the two is that the ASA requires five years of full-time equivalent appraising experience while the AM requires only two years of full-time equivalent appraising experience.

The business valuation standards of the American Society of Appraisers date from the early 1990s. The standards provide for three types of appraisal engagements: Appraisal, Limited Appraisal, and Calculations. The Appraisal and the Limited Appraisal are similar to the Appraisal and the Limited Appraisal of USPAP. The calculation is similar to a consulting type of engagement and may be based on a more restrictive scope than either of the other two types of engagements.

The American Society of Appraisers business valuation standards include an explanatory preamble and eight standards. Standards 1 through 7 discuss preparation of the valuation and Standard 8 covers reporting. Supplemental guidance is offered through Statements of Business Valuation Standards and through Advisory Opinions. The American Society of Appraisers also requires adherence to USPAP in certain situations.

The American Society of Appraisers can be contacted at 555 Herndon Parkway, Suite 125, Herndon, VA 20170; Phone: (703) 478-2228; Fax: (703) 742-8471; E-mail: asainfo@appraisers.org or on the Web at *www.appraisers.org*. There is a web site specific to business valuation at *www.bvappraisers.org*.

Institute of Business Appraisers

The Institute of Business Appraisers, through its founder, Ray Miles, has been active in the business valuation community since 1978. It offers the Certified Business Appraiser (CBA) credential upon passing a four-hour proctored examination, having two business valuation reports approved by the report committee, and education and experience requirements. It also offers these certifications: Master Certified Business Appraiser (MCBA), Accredited by IBA (AIBA), and Business Valuator Accredited for Litigation (BVAL).

The Institute of Business Appraisers' business valuation standards were first published in 1993 and have been revised periodically since then. In addition to a code of ethics, its standards consist of a preamble and six standards. The standards are somewhat unique in that in addition to preparation and written report standards, there are standards for oral appraisal reports and expert testimony.

The Institute of Business Appraisers can be contacted at P.O Box 1447, Boynton Beach, FL 33425; Phone (561) 732-3202. The web site is *http://go-iba.org*.

Canadian Institute of Chartered Business Valuators

The Canadian Institute of Chartered Business Valuators (CICBV) is a sister organization to the Canadian Institute of Chartered Accountants (CICA). Instead of offering the credential within the CICA, the Canadian Institute decided to form a separate organization to offer the CBV credential and to issue standards.

As might be expected, the standards of the CICBV are tailored to the Canadian Securities Industry and to valuation in Canadian commerce.

The business valuation standards include standards on valuation reporting; scope of work; file documentation; and advisory and expert report disclosures. There are appendixes related to fairness opinions and other pertinent issues. The standards differentiate among a valuation report, an advisory report, and an expert report and provide the criteria for each.

The CICBV team members lent an international perspective to the Business Valuation Glossary of Terms project completed in 2000.

The Canadian Institute of Chartered Business Valuators can be reached at 277 Wellington Street West, 5th Floor, Toronto, Ontario M5V 3H2. The web site for the CICBV is *http://cicbv.ca* and the email contact is admin@cicbv.ca.

The National Association of Certified Valuation Analysts

The National Association of Certified Valuation Analysts (NACVA) offers a credential in business appraising as a Certified Valuation Analyst (CVA). To qualify candidates must hold a valid CPA license, pass a half-day proctored exam, and a take home exam (report/case study). These are also educational requirements.

NACVA also offers other certifications as follows: Accredited Valuation Analyst (AVA), Government Valuation Analyst (GVA), and Certified Forensic Financial Analyst (CFFA).

NACVA first published its business valuation standards in the mid-1990s with periodic updates since then. The NACVA standards focus on the development of the opinion of value and on reporting.

NACVA can be reached at 1245 East Brickyard Road, Suite 110, Salt Lake City, UT, 84106; Phone (801) 486-0600; Fax (801) 486-7500. The web address is *www.nacva.com*.

The American Institute of Certified Public Accountants

With approximately 350,000 members, the American Institute of Certified Public Accountants (AICPA) is one of the largest organizations of accountants in the world. Like the American Society of Appraisers, many AICPA members are in fields other than business valuation.

The AICPA is the latest of the organizations to offer a credential in business valuation. Its Accredited in Business Valuation (ABV) credential was first offered in 1997. Its credential requirements include an eight-hour proctored examination and demonstrated experience in business valuation. There are follow-up requirements for reaccreditation every three years including continuing professional education and continued involvement in additional business valuation engagements.

The AICPA currently has business valuation standards under development, and it does have more general standards that all CPAs, including those performing business valuations, must follow. It includes the code of professional conduct and statement on standards for consulting services.

Because of the AICPA's close ties to the financial community rule makers and to the IRS through its members' tax services to clients, the need for specific AICPA business valuation standards has been recognized, and a national task force on Business Valuation Standards has been appointed and has begun its work. It is expected that these standards will be published in 2003.

The AICPA can be reached at its headquarters at 1211 Avenue of the Americas, New York, NY 10036; Phone: (212) 596-2000. The web addresses are *www.aicpa.org* and *www.cpa2biz.com*.

The Internal Revenue Service

The IRS is closely involved in business valuation for tax purposes. It is committed to upgrading the level of training for its business valuation team.

As a component of this improvement process, in 2001 the IRS Review Team issued its Recommendations on Internal Revenue Service Valuation Policies. This overview document provides recommendations to upgrade IRS policies in all areas of valuation. The team considered but did not recommend the adoption of USPAP for IRS purposes.

This IRS document is an encouraging step. It sends a clear signal that the IRS is closely following developments in the valuation industry. The entire profession will benefit if the IRS participates in the business valuation professional developmental process. The Addendum at the end of this chapter presents the current IRS Business Valuation Guidelines.

The Institute of Chartered Accountants of New Zealand

In November of 2000 the Institute of Chartered Accountants of New Zealand published its initial exposure draft of an Advisory Engagement Standard No. 2,

"Performance of Independent Business Valuation Engagements and Preparation of Independent Business Valuation Reports."

The standards draft covers the general principles relating to an independent business valuation engagement and covers procedures and reporting. Appendix 2 covers guidance for disclosure in the Independent Business Valuation Report.

This exposure draft is a welcome sign that the New Zealand Institute of Chartered Accountants will be an active participant in development of the international business valuation profession of the future. The web site for the Institute of Chartered Accountants of New Zealand is *http://icanz.co.nz*.

US Financial Reporting Requirements

With the issuance of Statements of Financial Accounting Standards (SFAS) 141 and 142 during 2001, the Financial Accounting Standards Board (FASB) has significantly changed the rules related to accounting for goodwill and other intangible value in U.S. financial statements.

With the requirement to demonstrate "substantial impairment" before goodwill can be written down or removed, the FASB has changed the nature of financial reporting so that reporting units of companies will have to be tested and/or revalued periodically for impairment. The AICPA has formed a task force to address these issues.

The AICPA is also addressing valuation issues for other financial reporting purposes and, through designated task forces, will issue practice aids stating their position. The first one available is *Assets Acquired in a Business Combination to Be Used in Research and Development Activities: A Focus on Software, Electronic Devices and Pharmaceutical Industries*. This publication identifies best practices for disclosing, valuing, and auditing assets acquired specifically in process research and development activities.

These practice aids and task forces will bring the valuation community and the users and auditors of financial statements much closer together and, further, provide opportunity for the valuation community to be part of this mainstream financial reporting function. The concept of goodwill impairment will evolve over time, but it is expected to increase the emphasis on quality valuation for the foreseeable future.

SUMMARY

A broad based national focus on business valuation standards began with the Uniform Standards of Professional Appraisal Practice from the Appraisal Foundation. They have evolved into expanded publications by a number of appraisal organizations, some of which had prior standards. With increasing emphasis from the Internal Revenue Service and expanded reporting requirements imposed by the financial reporting community, valuation standards will take on increased importance as the role of the business appraiser continues to increase.

ADDENDUM—INTERNAL REVENUE SERVICE BUSINESS VALUATION GUIDELINES

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1.0 Introduction

2.0 Development Guidelines

- 2.1 Planning
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Exhibits

BVG-1 International Glossary of Business Valuation Terms (See Chapter 1 of this book)

BVG-2 Valuation Report Checklist

1.0 Introduction

The Engineering Program Handbook (IRM 4.3.16) states that accomplishment of the objective of the IRS Engineering Program requires on-going risk analysis, quality factual development and communication with taxpayers in an effort to resolve issues.

The purpose of this document is to provide guidelines applicable to IRS Valuation Engineers, Appraisers, Valuation Specialists and others engaged in valuation practice (hereinafter referred to as "Valuators") relating to the development, resolution and reporting of issues involving business valuations and similar valuation issues. Valuators must be able to reasonably justify any departure from these guidelines. This document incorporates by reference, the Code of Conduct, applicable to all IRS employees, and all provisions of IRM 4.3.16 relevant to the development, resolution and reporting of such valuation issues.

2.0 Development Guidelines

2.1. Planning

2.1.1. The first step in a quality examination is the pre-examination planning process and cost/benefit or risk analysis. See Section 1.7 of IRM 4.3.16.

2.1.2. Valuators will adequately plan and their managers will supervise the staff involved in the valuation process.

2.1.3. Quality planning is a continual process throughout the valuation assignment.

2.2. Identifying

2.2.1. In developing a valuation conclusion, Valuators must define the assignment and determine the scope of work necessary by identifying the following:

2.2.1.1. Subject to be valued;
2.2.1.2. Interest to be valued;
2.2.1.3. Effective date of valuation;
2.2.1.4. Purpose of valuation;
2.2.1.5. Use of valuation;
2.2.1.6. Standard of value;
2.2.1.7. Premise or level of value;
2.2.1.8. Assumptions;
2.2.1.9. Limiting conditions;
2.2.1.10. Scope limitations;
2.2.1.11. Restrictions, agreements and other factors that may influence value;
2.2.1.12. Sources of information.

2.3. Analyzing

2.3.1. In developing a valuation conclusion, Valuators must obtain and analyze the relevant information necessary to accomplish the assignment, including:

2.3.1.1. The nature of the business and the history of the enterprise from its inception.
2.3.1.2. The economic outlook in general and the condition and outlook of the specific industry in particular.
2.3.1.3. The book value of the stock or interest and the financial condition of the business.
2.3.1.4. The earning capacity of the company.
2.3.1.5. The dividend-paying capacity.
2.3.1.6. Whether or not the enterprise has goodwill or other intangible value.
2.3.1.7. Sales of the stock or interest and the size of the block of stock to be valued.
2.3.1.8. The market price of stocks or interests of corporations or entities engaged in the same or a similar line of business

having their stocks or interests actively traded in a free and open market, either on an exchange or over-the-counter.

2.3.1.9. Other information deemed to be relevant

2.3.2. The three generally accepted valuation approaches are the asset-based approach, the market approach and the income approach. Consideration should be given to all three approaches. Professional judgment must be used to select the approach(es) ultimately used and the method(s) within such approach(es) that best indicate the value of the business interest.

2.3.3. Historical financial statements should be analyzed and, if necessary, adjusted to reflect the appropriate asset value, income, cash flows and/or benefit stream, as applicable, to be consistent with the valuation methodologies selected by the Valuator.

2.3.4. The Valuator should select the appropriate benefit stream, such as pre-tax or after-tax income and/or cash flows, and select appropriate multiples to be consistent with the valuation methodologies selected.

2.3.5. The Valuator will decide upon the appropriate discount and/or capitalization rate after taking into consideration all relevant factors, such as:

2.3.5.1. The nature of the business.

2.3.5.2. The risk involved.

2.3.5.3. The stability or irregularity of earnings.

2.3.5.4. Other relevant factors.

2.3.6. As appropriate for the assignment, and if not considered in the process of determining and weighing the indications of value provided by other procedures, the Valuator should separately consider the following factors in reaching a final conclusion of value:

2.3.6.1. Marketability, or lack thereof, considering the nature of the business, business ownership interest or security, the effect of relevant contractual and legal restrictions, and the condition of the markets;

2.3.6.2. Ability of the appraised interest to control the operation, sale, or liquidation of the relevant business;

2.3.6.3. Consistent with the standard of value in Section 2.2.1.6, other levels of value considerations, such as the impact of strategic or synergistic contributions to value; and

2.3.6.4. Such other factors which, in the opinion of the Valuator, are appropriate for consideration.

2.4. Workpapers

2.4.1. Workpapers must document the steps taken, techniques used, and provide the evidence to support the facts and conclusions in the final report. The workpapers must be organized and kept current throughout the examination, establishing a clear and concise audit trail.

2.4.2. Valuators will follow the mandatory workpaper auditing standards. They will ensure that workpapers are:
- 2.4.2.1. Logically organized;
- 2.4.2.2. Prepared to include a list or table of contents;
- 2.4.2.3. Indexed;
- 2.4.2.4. Bound or fastened (not loose);
- 2.4.2.5. Labeled (i.e. Valuator, date, taxpayer and year);
- 2.4.2.6. Neat and legible; and
- 2.4.2.7. Stored on properly labeled and secured diskettes.

2.4.3. Valuators will maintain a detailed case activity record (Form 9984) which:
- 2.4.3.1. Identifies actions taken and indicates time charged;
- 2.4.3.2. Identifies contracts including name, phone number, subject, commitments, etc.; and
- 2.4.3.3. Documents delays in the examination.

2.4.4. The case activity record, along with the supporting workpapers, should justify time spent is commensurate with work performed.

2.5. Reviewing

2.5.1. In reviewing a business valuation and reporting the results of that review, a Valuator must form an opinion as to the adequacy and appropriateness of the report being reviewed and must clearly disclose the nature of the review process undertaken.

2.5.2. In reviewing a business valuation, a Valuator must:
- 2.5.2.1. Identify the taxpayer and intended use of the Valuator's opinions and conclusions, and the purpose of the review assignment;
- 2.5.2.2. Identify the report under review, the property interest being valued, the effective date of the valuation, and the date of the review;
- 2.5.2.3. Identify the extent of the review process conducted;
- 2.5.2.4. Form an opinion as to the completeness of the report under review within the scope of work applicable in the review assignment;
- 2.5.2.5. Form an opinion as to the apparent adequacy and relevance of the data and the propriety of any adjustments to the data;
- 2.5.2.6. Form an opinion as to the appropriateness of the valuation methods and techniques used and develop the reasons for any disagreement; and
- 2.5.2.7. Form an opinion as to whether the analyses, opinions and conclusions in the report under review are appropriate and reasonable, and develop the reasons for any disagreement.
- 2.5.2.8. In the event of a disagreement with the report's factual representations, underlying assumptions, methodology or conclusions, conduct additional fact-finding, research and/or analyses necessary to make corrections or revisions to arrive at a proper estimate of value.

2.5.3. In reviewing a business valuation, a Valuator should utilize a checklist, similar to the example attached to these guidelines, modifying as necessary to suit the specific assignment.

3.0 Resolution Guidelines

3.1. Objective

3.1.1. The objective is to resolve the issue as early in the examination as possible. Credible and compelling work by the Valuator will facilitate resolution of issues without litigation.

3.1.2. The Valuator will determine who has authority to resolve issues within the taxpayer's organization and will discuss issues with the examiner or case manager prior to presenting findings to the taxpayer.

3.1.3. Managers of Valuators will be involved in resolving issues.

3.2. Arriving at Conclusions

3.2.1. Once the Valuator has all the information to be considered in resolving the issue, the Valuator will use his/her professional judgment in considering this information to arrive at a conclusion.

3.2.2. Valuators may not have all of the information they would like to have to definitively resolve an issue. Valuators, therefore, must decide when they have substantially enough information to make a proper determination.

3.2.3. Valuators will employ independent and objective judgment in reaching conclusions and will decide all matters on their merits, free from bias, advocacy and conflicts of interest.

4.0 Reporting Guidelines

4.1. Overview

4.1.1. The primary objective of a valuation report is to provide convincing and compelling support for the conclusions reached.

4.1.2. Valuation reports should contain all the information necessary to ensure a clear understanding of the valuation analyses and demonstrate how the conclusions were reached.

4.2. Report Contents

4.2.1. The type of report prepared depends on the needs of each case. See 1.7.7.1 of IRM 4.3.16.

4.2.2. Valuation reports should be well written, communicate the results and identify the information relied upon in the valuation process. The report should effectively communicate important thoughts, methods and reasoning, as well as identify the supporting docu-

mentation in a simple and concise manner, so that the user of the report can replicate the process followed by the Valuator.

4.2.3. Subject to the type of report being written, valuation reports should generally contain sufficient information relating to the items in Sections 2.2 and 2.3, above, to ensure consistency and quality of valuation reports issued by IRS Valuators.

4.2.4. Limited valuation reports written with respect to Section 2.5.2.8, above, shall contain, at a minimum, those items in Sections 2.2 and 2.3 necessary to support the revised assumptions, analyses, and/or conclusions of the Valuator.

4.3. Statement

4.3.1. Each written valuation report must contain a signed statement that is similar in content to the following:

I am the person who has primary responsibility for the opinion of value contained in this report and attest that, to the best of my knowledge and belief:

- The reported analyses, opinions and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, unbiased professional analyses, opinions and conclusions.
- I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest with respect to the parties involved.
- I have no bias with respect to the property that is the subject of this report or to the parties involved with this assignment.
- My compensation is not contingent on an action or event resulting from the analyses, opinions or conclusions in, or the use of, this report.
- My analyses, opinions and conclusions were developed, and this report has been prepared in conformity with the applicable Internal Revenue Service Valuation Standards.

Exhibit BVG-2 Valuation Report Checklist

Company: _____ Valuation Date: _____

Completed by: _____ Date: _____

This checklist can be used to assist internal accountants and analysts in preparing full written valuation reports that comply with professional requirements in those relatively rare cases when such reports are needed. The "Authoritative Reference" column cites the professional literature that requires each procedure. References preceded by "ASA" refer to *The Principles of Appraisal Practice and Code of Ethics* of the American Society of Appraisers. References preceded by "SR" refer to standards rules of the *Uniform Standards of Professional Appraisal Practice* of the Appraisal Foundation. "BVS" refers to BVS-VII, "Comprehensive Written Business Valuation Report," issued by the ASA Business Valuation

Committee. "IBA" refers to Standard 5, "Formal Written Appraisal Reports" issued by the Institute of Business Appraisers. Analysts should consider the professional requirements that apply to their professions such as AICPA. An asterisk (*) appearing in the "Authoritative Reference" column identifies an additional item recommended by the authors.

INSTRUCTIONS: Answer each question with a (✔) in the appropriate column: (a) Yes—item included in the report, (b) No—item is applicable but is omitted from the report (any item checked "No" should be explained on the checklist or in a separate memorandum); or (c) N/A—the item is either not applicable or insignificant to the current engagement. A block (❑) has been provided for each major disclosure caption. If the major caption is not applicable for this engagement, you may place a (✔) in the (❑). Then it will not be necessary to check N/A for *each question under the caption*.

Authoritative Reference	Procedure	Yes	No	N/A
	GENERAL			❑
*	1. Is the material in the report relevant and free of unnecessary boilerplate?			
*	2. Are all calculations mathematically correct?			
*	3. Do the data and analyses in the report lead logically to a well-supported conclusion?			
*	4. Does the report contain all relevant factors and data?			
*	5. Do the data and valuation methods used conform properly to the definition of value stated in the report?			
*	6. Is all technical jargon clearly defined?			
BVS and IBA	7. Does the report consider all the requirements relating to the circumstances of the engagement (IRS requirements, DOL Regulations, legal precedents, etc.)?			
	INTRODUCTION			❑
	8. Is the following information disclosed:			
BVS and IBA	a. The client's name			
ASA 8.1, BVS, IBA, and SR 10-	b. Subject company and ownership interest			
ASA 8.1, BVS, IBA, and SR 10-2	c. Any special rights or restrictions relating to the subject interest			
ASA 8.2, BVS, IBA, and SR 10-2	d. The valuation date			
ASA 8.2, BVS, IBA, and SR 10-2	e. The purpose of the valuation			
ASA 8.2, BVS, IBA, and SR 10-2	f. Definition of value used (fair market value, fair value, etc.)			
BVS, IBA, and SR 10-2	g. Report date			
BVS, 16A, and ASA 8.3	h. Sources of data used in the valuation			

(*continues*)

Authoritative Reference	Procedure	Yes	No	N/A
	COMPANY BACKGROUND			❑
ASA 8.1, BVS, IBA, SR 9-4, and SR 10-2	9. Does the report provide general information about the company and and its history? Such information may include: • Type of industry • Products/services, markets, and customers • Legal form • State of incorporation • Company history • Company management • Ownership (types of stock) • Competition • Sensitivity to seasonal or cyclical factors • Strengths and weaknesses			
ASA 8.1, BVS, IBA, SR 9-4, and SR 10-2	10. Does the report discuss relevant financial information about the and company? Such information may include: • Financial condition, including major assets • Profitability and earnings capacity • Dividend-paying capacity • Value of goodwill or other intangibles • Transactions in the company's stock • Outlook for the company			
	FINANCIAL STATEMENT DATA			❑
ASA 8. 1. ASA 8.3, BVS,	11. Does the report include financial statement data that is relevant to the valuation?			
and SR 10-2 BVS	12. If the financial statement data was adjusted, are all the adjustments explained?			
BVS	13. If prospective financial information was used in the valuation: a. Is that information presented in the report? b. Are key underlying assumptions discussed?			
See Section 910	14. [CPAs *only*] If historical financial statements are presented, have AICPA requirements been met?			
See Section 910	15. [CPAs *only*] If prospective financial information is presented, have AICPA requirements been met?			
	Practical Considerations: • A separate report on prospective financial information is only required for complete presentations intended for third-party use.			

Authoritative Reference	Procedure	Yes	No	N/A
	• For partial presentations or internal use reports, the valuation report should include statements that prospective results may not be achieved and that the report is restricted to internal use (or specific named parties, if applicable). • Partial presentations should only be used for internal use or for parties with whom the company is directly negotiating.			
	ECONOMIC AND INDUSTRY DATA ❑			
ASA 8.1	16. Does the report discuss relevant economic and industry factors that affect the valuation? Such information may include:			
ASA 8.3, BVS, IBA, SR 9-4, and SR 10-2	• National economic data • Regional and local economic data • Industry trends or financial data (including comparison to company data)			
	SEARCH FOR COMPARATIVES ❑			
IBA, SR 9-4, and SR 10-2	17. Does the report discuss what steps were taken to search for comparative companies, the sources used, and the results of that search?			
ASA 8.1, ASA 8.3, and SR 10-2	18. If any comparatives were found, does the report provide relevant financial data for each comparative and discuss any adjustments made to that data?			
	19. Is the report consistent with regard to: a. Making similar adjustments for the subject company and comparatives? b. Making appropriate adjustments to comparative data that relate to a time period that differs from subject company data?			
	VALUATION METHODS ❑			
ASA 8.4, BVS, IBA, SR 9-5, and SR 10-2	20. Does the report discuss all the relevant valuation methods that were considered in the engagement, which ones were selected, and the basis for that selection?			
BVS, I BA, and ASA 8.4	21. Does the report provide a brief description of each method selected and how it was used?			
ASA 6.2, IBA, SR 10-1, and SR 10-2	22. Are valuation calculations presented in enough detail that the reader can re-perform those calculations from the data given?			

(*continues*)

Authoritative Reference	Procedure	Yes	No	N/A
BVS, IBA, and SR 10-2	23. Does the report explain how all key variables (discount rates, value multiples, etc.) were determined and used?			
	24. Are risk factors relating to the subject company and ownership interest adequately analyzed, including their effects on variables?			
	25. Is the report consistent with regard to: a. Applying valuation multiples to the proper parameter (earnings, net cash flow, etc.)? b. Applying discount or capitalization rates to the proper parameter?			
	26. Does the report avoid mixing pretax and after-tax data where appropriate?			
	VALUATION CONCLUSION			❑
SR 9-5 and SIR 10-2	27. Does the report discuss how the values indicated by the methods used were weighted to determine a final value estimate?			
BVS, IBA, and SR 10-2	28. If any adjustments for control, non-marketability, etc. were applied, does the report explain them and how they were determined?			
	ADDENDA MATERIAL			❑
ASA 8.5, BVS, IBA, and SR 10-3	29. Does the report include a statement on the independence (or state why the accountant/analyst is not independent)?			
	30. Does the report include a list of the accountant/analyst qualifications?			
ASA 6-4, BVS, IBA, SR 10-1, and SR 10-3	31. Does the report contain a list containing the following assumptions and limiting conditions, where applicable: a. Reliance on information from management or others without verification b. Restrictions on use of the report c. Caveat that report is only valid for the date specified d. Other matters unique to the engagement			
BVS, IBA, and SR 10-3	32. If applicable, does the report include the certifications required by *Uniform Standards of Professional Appraisal Practice*?			

Authoritative Reference	Procedure	Yes	No	N/A
	Practical Consideration: • These certifications are only required if the accountant/analyst purports to have conducted the valuation and prepared the report in conformity with the Uniform Standards of Professional Appraisal Practice.			
	SIGNATURES ❑			
ASA 8.8, BVS, IBA, and SR 10-2	33. Has the report been signed by the person who (a) performed or supervised the valuation and (b) assumes technical responsibility for it?			
	Practical Consideration: • If a CPA signs the firm's name on the report, then the report should disclose the name of the person responsible for the engagement.			
ASA 8.8	34. If there are any collaborating appraisers who agree with the report's findings, have they also signed the report?			
ASA 8.8	35. If there are any collaborating appraisers who disagree with the report's findings, does the report include their dissenting opinions?			
	SPECIAL REPORTS ❑			
ASA 8.3	36. If this is a hypothetical valuation, does the report: a. Clearly indicate that the valuation is hypothetical? b. Explain why a hypothetical valuation was performed? c. State the assumed hypothetical conditions used?			
ASA 8.3	37. If this is a fractional valuation, does the report: a. Clearly indicate that the valuation is fractional? b. Provide restrictions on the report's use?			
ASA 8.3	38. If this is a preliminary report, does the report: a. Clearly indicate that the report is preliminary? b. Provide restrictions on the report's use?			

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CHAPTER 11

Estate, Gift, and Income Tax Valuations

Selected Internal Revenue Code Provisions, Treasury Regulations, and Revenue Rulings

In this world nothing is certain but death and taxes.
—Benjamin Franklin, American patriot, 1789

The avoidance of taxes is the only pursuit that still carries any reward.
—John Maynard Keynes, British economist, 1942

While "nothing is certain but death and taxes," one also might argue that given human nature, an additional certainty is that where possible, taxpayers will seek to minimize their taxes. For estate, gift, and income tax planning purposes, minimization of taxes is one of the primary objectives for owners of closely held businesses. This chapter presents a general overview of the guidelines for estate, gift, and income tax valuations as set forth in the Internal Revenue Code, Treasury Regulations, and Internal Revenue Service (IRS) Revenue Rulings. Detailed discussions of valuation considerations such as approaches, methods, and discounts are discussed elsewhere in the book. Chapter 13 presents a more complete discussion of relevant Tax Court cases. Detailed checklists/ready reference of Revenue Rulings 59-60, 77-287, and 93-12 that analysts can use in their valuations are presented at the end of this chapter.

VALUATIONS IN ESTATE AND GIFT TAXES

General guidelines for estate and gift valuations are primarily set forth in the Internal Revenue Code (IRC), Treasury Regulations, and Revenue Rulings (Rev. Rul.). Additional guidance is also found in the IRS positions as set forth in Technical Advice Memorandums and Private Letter Rulings. Court cases are also very useful (see Chapter 13).

Selected Internal Revenue Code Provisions

The Internal Revenue Code provides general guidance on the valuation of closely held companies as well as the applicable valuation dates for estate and gift taxes.

Valuation of Closely Held Companies

IRC § 2031(b) addresses the valuation of closely held companies for estate tax purposes and suggests that consideration be given to the value of publicly traded guideline company stocks when valuing the stock of a closely held business.

> 2031(b) VALUATION OF UNLISTED STOCK AND SECURITIES
>
> In the case of stock and securities of a corporation the value of which, by reason of their not being listed on an exchange and by reason of the absence of sales thereof, cannot be determined with reference to bid and asked prices or with reference to sales prices, the value thereof shall be determined by taking into consideration, in addition to all other factors, the value of stock or securities of corporations engaged in the same or a similar line of business which are listed on an exchange.[1]

Revenue Ruling 59-60, discussed elsewhere in this chapter, further elaborates on the use of publicly traded guideline companies to value closely held businesses.

Valuation Date

The applicable valuation date for estate taxes is defined as the date of death in IRC § 2031(a):

> 2031(a) GENERAL
>
> The value of the gross estate of the decedent shall be determined by including to the extent provided for in this part, the value at the time of his death of all property, real or personal, tangible or intangible, wherever situated.[2]

Further, an alternative valuation date of six months subsequent to the date of death is provided for in IRC § 2032(a).[3]

ValTip

Use of the alternative date may help to minimize estate taxes. For example, if the decedent was the key person in a closely held business, then the business's financial performance may decline during the period subsequent to death. The actual financial results will serve to support the proposition that the business was dependent on the decedent.

The valuation date for gift taxes is set forth in IRC § 2512(a) as the date of the gift:

> SEC. 2512. VALUATION OF GIFTS
>
> (a) If the gift is made in property, the value thereof at the date of the gift shall be considered the amount of the gift.[4]

[1] IRC § 2031(b).
[2] IRC § 2031(a).
[3] IRC § 2032(a).
[4] IRC § 2512(a).

Special Valuation Guidelines

Other important Internal Revenue Code sections having estate and gift tax valuation implications include Chapter 14 of the IRC, specifically § 2701-2704.[5] Chapter 12 of this book presents an overview of these sections.

SELECTED TREASURY REGULATIONS

Treasury Regulations represent the IRS interpretation of the IRC. Key Treasury Regulations address the applicable standard of value for estate and gift taxes, guidelines for valuing closely held businesses, and disclosure requirements for gift tax returns.

Standard of Value

Treasury Regulation § 20.2031-1 defines the standard of value for estate tax matters as *fair market value:*

> § 20.2031-1 Definition of gross estate; valuation of property.
>
> (b) *Valuation of property in general.* The value of every item of property includible in a decedent's gross estate under sections 2031 through 2044 is its fair market value at the time of the decedent's death, except that if the executor elects the alternate valuation method under section 2032 , it is the fair market value thereof at the date, and with the adjustments, prescribed in that section. The fair market value is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.[6]

The corresponding regulation for gift tax valuations is found in Treasury Regulation § 25.2512-1.

Valuation of Corporate Stock

Treasury Regulation § 20.2031-2(f) addresses the valuation of corporate stock for estate tax purposes where stock prices are unavailable. This regulation also discusses certain factors to consider when valuing such securities.

> §20.2031-2 Valuation of stocks and bonds.
>
> (f) *Where selling prices or bid and asked prices are unavailable.* If the provisions of paragraphs (b), (c), and (d) of this section are inapplicable because actual sale prices and bona fide bid and asked prices are lacking, then the fair market value is to be determined by taking the following factors into consideration:
>
> (1) In the case of corporate or other bonds, the soundness of the security, the interest yield, the date of maturity, and other relevant factors; and

[5] IRC § 2701-2704.
[6] Treasury Regulation § 20.2031-1(b).

(2) In the case of shares of stock, the company's net worth, prospective earning power and dividend-paying capacity, and other relevant factors.

Some of the "other relevant factors" referred to in subparagraphs (1) and (2) of this paragraph are: the goodwill of the business; the economic outlook in the particular industry; the company's position in the industry and its management; the degree of control of the business represented by the block of stock to be valued; and the values of securities of corporations engaged in the same or similar lines of business which are listed on a stock exchange. However, the weight to be accorded such comparisons or any other evidentiary factors considered in the determination of a value depends upon the facts of each case. In addition to the relevant factors described above, consideration shall also be given to nonoperating assets, including proceeds of life insurance policies payable to or for the benefit of the company, to the extent such nonoperating assets have not been taken into account in the determination of net worth, prospective earning power and dividend-earning capacity. Complete financial and other data upon which the valuation is based should be submitted with the return, including copies of reports of any examinations of the company made by accountants, engineers, or any technical experts as of or near the applicable valuation date.[7]

The corresponding regulation for gift tax valuations is found in Treasury Regulation § 25.2512-2(f).

Valuation of Unincorporated Interests in Businesses

Treasury Regulation § 20.2031-3 discusses valuation of unincorporated interests in businesses for estate tax purposes. Of particular note is the regulation's emphasis on the valuation of goodwill.

§20.2031-3 Valuation of interests in businesses.

The fair market value of any interest of a decedent in a business, whether a partnership or a proprietorship, is the net amount which a willing purchaser, whether an individual or a corporation, would pay for the interest to a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts. The net value is determined on the basis of all relevant factors including—

(a) A fair appraisal as of the applicable valuation date of all the assets of the business, tangible and intangible, including goodwill;

(b) The demonstrated earning capacity of the business; and

(c) The other factors set forth in paragraphs (f) and (h) of §20.2031-2 relating to the valuation of corporate stock, to the extent applicable.

Special attention should be given to determining an adequate value of the goodwill of the business in all cases in which the decedent has not agreed, for an adequate and full consideration in money or money's

[7] Treasury Regulation § 20.2031-2(f).

> worth, that his interest passes at his death to, for example, his surviving partner or partners. Complete financial and other data upon which the valuation is based should be submitted with the return, including copies of reports of examinations of the business made by accountants, engineers, or any technical experts as of or near the applicable valuation date.[8]

The corresponding regulation for gift tax valuations is found in Treasury Regulation § 25.2512-3.

Disclosure of Gifts

On December 3, 1999, the IRS issued its final regulations regarding adequate disclosure of gifts on gift tax returns. The regulations provide for a three-year statute of limitations beyond which the IRS cannot challenge the tax return provided that the gifts are adequately disclosed. These regulations are applicable to all gifts made after December 31, 1996, for which gift tax returns are filed after December 3, 1999.

Treasury Regulation § 301.6501(c)-1 sets forth the adequate disclosure requirements. Treasury Regulation § 301.6501(c)-1(f)(3)(i) lists the requirements that must be satisfied by the analyst who prepares the valuation:

> §301.6501(c)-1(f)(3)(i)
>
> (3) *Submission of appraisals in lieu of the information required under paragraph (f)(2)(iv) of this section.* The requirements of paragraph (f)(2)(iv) of this section will be satisfied if the donor submits an appraisal of the transferred property that meets the following requirements—
>
> (i) The appraisal is prepared by an appraiser who satisfies all of the following requirements:
>
> (A) The appraiser is an individual who holds himself or herself out to the public as an appraiser or performs appraisals on a regular basis.
>
> (B) Because of the appraiser's qualifications, as described in the appraisal that details the appraiser's background, experience, education, and membership, if any, in professional appraisal associations, the appraiser is qualified to make appraisals of the type of property being valued.
>
> (C) The appraiser is not the donor or the donee of the property or a member of the family of the donor or donee, as defined in section 2032A(e)(2), or any person employed by the donor, the donee, or a member of the family of either[9];

Treasury Regulation § 301.6501(c)-1(f)(3)(ii) lists the information that must be disclosed in the valuation report to satisfy the adequate disclosure requirements:

> §301.6501(c)-1(f)(3)(ii)
>
> (ii) The appraisal contains all of the following:

[8] Treasury Regulation § 20.2031-3.

[9] Treasury Regulation § 301.6501(c)-1(f)(3)(i).

(A) The date of the transfer, the date on which the transferred property was appraised, and the purpose of the appraisal.

(B) A description of the property.

(C) A description of the appraisal process employed.

(D) A description of the assumptions, hypothetical conditions, and any limiting conditions and restrictions on the transferred property that affect the analyses, opinions, and conclusions.

(E) The information considered in determining the appraised value, including in the case of an ownership interest in a business, all financial data that was used in determining the value of the interest that is sufficiently detailed so that another person can replicate the process and arrive at the appraised value.

(F) The appraisal procedures followed, and the reasoning that supports the analyses, opinions, and conclusions.

(G) The valuation method utilized, the rationale for the valuation method, and the procedure used in determining the fair market value of the asset transferred.

(H) The specific basis for the valuation, such as specific comparable sales or transactions, sales of similar interests, asset-based approaches, merger-acquisition transactions, etc.[10]

SELECTED REVENUE RULINGS

Revenue Rulings provide guidance for general situations not requiring a specific change in the Treasury Regulations. This section discusses key Revenue Rulings relating to valuations for estate, gift, and income tax purposes, including 59-60, 77-287, and 83-120, and 93-12.

Revenue Ruling 59-60

Revenue Ruling 59-60 is the single most important revenue ruling relating to the valuation of closely held companies for estate and gift tax purposes. It was later amplified to include valuation issues for income tax purposes as well. While it relates primarily to valuations of closely held businesses for estate, gift, and income taxes, because of its wide acceptance by various courts and venues, the users of valuation information, and valuation analysts, it is often cited as a relevant source for other types of valuations.

Standard of Value

Revenue Ruling 59-60 cites the definition of fair market value provided in Treasury Regulations § 20.2031-1(b) and § 25.2512-1 as the applicable standard of value.

> Section 20.2031-1(b) of the Estate Tax Regulations and section 25.2512-1 of the Gift Tax Regulations define fair market value, in effect, as the price at which the property would change hands between a willing buyer

[10] Treasury Regulation § 301.6501(c)-1(f)(3)(ii).

> and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts.[11]

It expands on this definition to state that the buyer and seller are presumed to be *hypothetical* buyers and sellers (as opposed to specific buyers and sellers) and also are *able* as well as willing to trade (i.e., they have the financial wherewithal and operational control to consummate the hypothetical transaction).

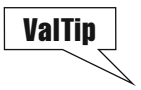
> Court decisions frequently state in addition that the hypothetical buyer and seller are assumed to be able, as well as willing, to trade and to be well informed about the property and concerning the market for such property.[12]

Approach to Valuation

Information to Be Considered

Valuation is not an exact science. Rather the appraiser must consider all of the relevant facts and use common sense, judgment, and reasonableness in assessing those facts and determining their importance relative to the valuation of the subject company.[13]

Guidance as to the "cut-off" date for information that may be used for purposes of the valuation is provided. The valuation must be *based on the facts available at the required date of appraisal*.[14]



Often events that would otherwise affect a subject company's value occur subsequent to the valuation date. Such events generally should not be considered for purposes of estate and gift tax valuations. The key to determining what events should be considered is what facts were known or reasonably knowable as of the valuation date.

Importance of Future Financial Performance

The ruling indicates that the valuation of securities is a *prophecy as to the future* and reflects the degree of optimism or pessimism with which investors regard the future of the subject company's prospects as of the appraisal date.[15]

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[11] Rev. Rul. 59-60, 1959-1 CB 237, Sec. 2.02.
[12] *Ibid.*
[13] *Ibid.,* Sec. 3.01.
[14] *Ibid.,* Sec. 3.03.
[15] *Ibid.,* Sec. 3.02-3.03.

ValTip

Many analysts make the mistake of focusing on a subject company's past historical performance as the primary determinant of value. The expectation of the company's future performance as of the valuation date is what determines value. Past performance is only relevant to the extent that it is indicative of the company's future performance.

Assessment of Risk and Its Relationship to Value

Revenue Ruling 59-60 specifically addresses the relationship between risk (uncertainty) and value, noting that "uncertainty as to the stability or continuity of the future income from a property decreases its value by increasing the risk of loss of earnings and value in the future."[16]

Analysts must exercise judgment as to the degree of risk. This risk is reflected in the discount rate when employing an income approach (discussed in Chapter 5) or in the valuation multiple when using a market approach (discussed in Chapter 6).

Use of Market Approach for Valuing Closely Held Companies

The best measure of a stock's value is the price realized in a free and active market. However, where a stock is traded infrequently or closely held, then some other measure must be used. In many cases, the next best alternative is to use the prices of the stocks of companies in the same or similar line of business.[17]

Factors to Consider

Revenue Ruling 59-60 notes eight factors or tenents of value that should be considered when valuing the stock of closely held companies. While these factors are not all-inclusive, they do provide a good general framework for structuring analytical work. A summary of the pertinent points relating to each factor follows.

Nature and History of the Business

The history of a business provides an indication of its stability, growth, diversification of operations, and the like that provide an indication of the business's risk. Aspects of the business history that should be analyzed include the nature of the business, its products or services, operating and investment assets, capital structure, plant facilities, sales records, and management. More detailed information should be collected and analyzed for events that are near to the valuation date as they are probably more indicative of the company's future performance. Events of the past that are unlikely to recur in the future should be discounted, since value has a close relation to future expectations.[18]

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[16] *Ibid.,* Sec. 3.02.
[17] *Ibid.,* Sec. 3.03.
[18] *Ibid.,* Sec. 4.02(a).

Economic and Industry Outlook

A valuation must consider the current and future economic and industry conditions as of the date of the valuation in order to assess the subject company's competitive position as well as the overall competitiveness of the company's industry with other industries. Chapter 2 presents a detailed discussion of external facts to be considered for valuation purposes, as well as sources for obtaining this information.

A key company specific consideration is whether there is a "key person" upon which the success of the business depends. The loss of such an individual may have a detrimental effect on value if the company has not planned for management succession. Mitigating factors such as the existence of life insurance or the ability to hire replacement management also should be considered as these may offset some of the loss of a key person's services and the detriment to value.[19]

Book Value of the Stock and the Financial Condition of the Business

The analyst should obtain balance sheets for the company for two or more years preceding the valuation date as well as the month preceding the valuation date. In analyzing the balance sheets, the analyst should focus on liquidity, working capital, major fixed assets, long-term debt, the company's capital structure, and net worth. Analysis of this information over time will permit identification of significant events and trends, such changes in financial position and capital structure and acquisitions. Nonoperating assets should be identified and segregated from the operating assets and restated at market value. If the company has more than one class of stock, the corporate documents should be examined to determine the rights and privileges of the various classes including voting powers and dividend and liquidation preferences.[20] A detailed discussion of the analysis of the balance sheet is presented in Chapter 3.

Earning Capacity of the Company

Value is dependent on investors' expectations of a company's *future* earnings capacity. If an unprofitable operation can be discontinued without adversely affecting the company's other lines of business, then the future earnings capacity (and hence the value) of the remaining lines of business may be materially greater than if the values of all operating lines were aggregated. In other words, the sum of *some* of the parts may be greater than the whole.

Income statements should be obtained for five or more years preceding the valuation date as well as the period immediately preceding the valuation date. This information will facilitate analysis of revenues by source, significant operating expenses, interest expense, depreciation and amortization, reasonableness of officers' compensation, contributions, income taxes, income available for distribution to share-

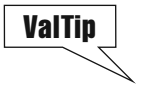
[19] *Ibid.*, Sec. 4.02(b).
[20] *Ibid.*, Sec. 4.02(c).

holders, rates and amounts of dividends paid on each class of stock, and retained earnings. As with the balance sheet, the appraiser should segregate operating and nonoperating items. Further, the analyst should determine whether any line of business in which the company is engaged is operated consistently at a loss and might be abandoned with benefit to the company.

Analysis of the company's historical earnings may be indicative of future performance. Revenue Ruling 59-60 stresses that reliance on *arbitrary five- or 10-year averages without regard to current trends or future prospects will not produce a realistic valuation*. Consideration should be given to observed trends. For example, if a company exhibits progressively increasing or decreasing earnings trends, then current earnings may be given greater weight. Common size analysis of the income statements may be beneficial in assessing risk and determining marginal performance relative to the industry.[21]

A detailed discussion of the analysis of the income statement is presented in Chapter 3.

Dividend-Paying Capacity



> The definition of dividend-paying capacity is equivalent to equity net cash flows (i.e., *those cash flows available to pay out to equity holders [in the form of dividends] after funding operations of the business)*.[22]

The capacity of the company to pay dividends to shareholders, as opposed to dividends historically paid, should be given primary consideration in determining value, recognizing that it may be necessary for a company to retain a reasonable portion of its profits to meet competition.

Revenue Ruling 59-60 further notes that payment of dividends is discretionary for a controlling interest. Such an interest may substitute compensation for dividends with the effect of reducing net income and income available for distribution as dividends. Consequently, actual payments of dividends may not be a reliable indication of value.[23]

Intangible Assets

Goodwill is based on earnings and results from the ability of a company to realize a higher value than it would otherwise realize on its tangible assets alone. Factors contributing to goodwill include a company's reputation, ownership of trade or brand names, and a history of successful operation over time in a particular location. It may not be possible to segregate the value of goodwill and other intangibles from the value of the tangible assets. However, the value of such intangibles is implicit in the value of the overall enterprise.[24]

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[21] *Ibid.,* Sec. 4.02(d).
[22] *International Glossary of Business Valuation Terms.*
[23] Rev. Rul. 59-60, 1959-1 CB 237, Sec. 4.02(e).
[24] *Ibid.,* Sec. 4.02(f).

Past Sales of Company Stock

Sales of the subject company's own stock should be considered as an indication of value. Such sales may be indicative of value if the transactions are at arm's length, the sales are not isolated small blocks of stock, and the sales did not result from force or distress.

The size of the block of stock should be considered including the impact of control and lack of marketability on value. With respect to control, Revenue Ruling 59-60 notes that *control of a corporation, either actual or in effect, representing as it does an added element of value, may justify a higher value for a specific block of stock*. Regarding marketability, Revenue Ruling 59-60 acknowledges that a *minority interest in an unlisted corporation's stock is more difficult to sell than a similar block of listed stock*. [25]

Market Price of Stocks of Guideline Publicly Traded Companies

ValTip

Many inexperienced appraisers fail to consider the use of the market approach/guideline public company methodology because they believe that publicly traded companies are too large to be truly comparable. While the size of many public companies may eliminate them as comparables, the sizes of many public companies may approximate that of the closely held company being valued, particularly in certain industries, such as high technology, for which there have been initial public offerings for companies with relatively small market capitalizations.

ValTip

Revenue Ruling 59-60 does not specifically address the use of the market approach/ guideline company transaction method in valuing closely held companies, as these data have become widely available only recently. However, the guidelines relating to comparability of the business lines and consideration of other relevant factors presented in Revenue Ruling 59-60 for the application of the guideline public company method may be applicable to the guideline company transaction method as well.

Revenue Ruling 59-60 cites IRC § 2031(b), which indicates that consideration be given to the value of publicly traded guideline company stocks when valuing the stock of a closely held business. It emphasizes that the guideline public stock be actively traded, and only the stocks of comparable publicly traded companies should be considered. In defining comparability, Revenue Ruling 59-60 reiterates the provision in Treasury Regulation § 20.2031-2(f) that the companies' lines of business be

[25] *Ibid.,* Sec. 4.02(g).

the same or similar. However, it also notes that consideration should be given to other relevant factors to ensure the most valid comparable companies are identified.[26]

A more detailed discussion of the selection of publicly traded guideline companies is presented in Chapters 2 and 6.

Weight Accorded to Factors

In assessing all the factors, certain ones may be given more weight than others, depending on the facts and circumstances. For example, earnings may be more important when valuing companies that sell products or services, whereas the underlying assets may be more important when valuing holding companies. With respect to assets, Revenue Ruling 59-60 notes that:

> The market values of the underlying assets give due weight to potential earnings and dividends of the particular items of property underlying the stock, capitalized at rates deemed proper by the investing public at the date of appraisal. For these reasons, adjusted net worth should be accorded greater weight in valuing the stock of a closely held investment or real estate holding company, whether or not family owned, than any of the other customary yardsticks of appraisal, such as earnings and dividend paying capacity.[27]

Revenue Ruling 59-60 supports the use of an asset approach for valuing investment or holding companies. Therefore, use of an asset approach when valuing family limited partnerships and limited liability companies (LLCs) with similar characteristics is considered reasonable in view of this ruling.

A discussion of the valuation of family limited partnerships is presented in Chapter 12 and valuation of other pass-through entities is presented in Chapter 23.

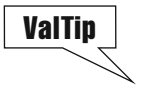
Capitalization Rates

When using an income approach, the determination of the capitalization rate (and, by implication, a discount rate) is one of the most difficult problems in valuation. Rates of return vary widely, even for companies in the same industry, and can fluctuate from year to year depending on the prevailing economic conditions. Consequently, no standard rates can be formulated for application to a closely held company. In determining the capitalization rate, the following factors should be considered:

- nature of the business
- risk involved
- stability or irregularity of earnings[28]

[26] *Ibid.,* Sec. 4.02(h).
[27] *Ibid.,* Sec. 5(b).
[28] *Ibid.,* Sec. 6.

Determination of the discount and capitalization rates is discussed in Chapters 4 and 5.



Inexperienced analysts often make the mistake of arbitrarily averaging each of the various valuation approaches/methodologies used in valuing a closely held company. For example, if three approaches are used, each approach may be assigned an equal one-third weighting. As noted in Revenue Ruling 59-60, such an approach would serve no purpose. Rather, each valuation is subject to particular facts and circumstances, and these must be considered in selecting the most appropriate approach(es), and level of reliance, when determining the final estimate of value.

Average of Factors

Because valuations cannot be made based on some predetermined formula, there is no means to assign mathematical weights to alternative valuation approaches and methodologies. "For this reason, no useful purpose is served by taking an average of several factors (for example, book value, capitalized earnings and capitalized dividends) and basing the valuation on the result."[29]

Restrictive Agreements

For estate tax (but not gift tax) purposes, where stock is acquired by a decedent subject to an agreement that contains an option to repurchase the stock at a specified price, that price may be accepted as the fair market value of the stock if the agreement is the result of a voluntary action by the stockholders and is binding during life as well as at death. In this instance, the agreement is a factor to be considered, along with other relevant factors, in determining the fair market value of the stock. However, if a stockholder is free to dispose of the stock during his or her life and the repurchase option becomes effective only upon the decedent's death, the fair market value is not limited to the option price. It will be necessary to consider the relationship of the parties, the relative number of shares held by the decedent, and other material facts to determine whether the agreement represents a bona fide business arrangement or is simply a device to pass the decedent's shares to heirs for less than adequate consideration.[30] See Chapter 23 for additional information on buy/sell agreements.

Section 8 of Revenue Ruling 59-60 has been superseded in certain instances by IRC § 2703. See discussion of § 2703 in Chapter 12.

REV-RUL, Valuation of stocks and bonds, Rev. Rul. 59-60, 1959-1 CB 237, (Jan. 01, 1959)
Rev.Rul. 59-60, 1959-1 CB 237

[29] *Ibid.,* Sec. 7.
[30] *Ibid.,* Sec. 8.

SECTION 2031.—DEFINITION OF GROSS ESTATE
26 CFR 20.2031-2: Valuation of stocks and bonds.
(Also Section 2512.)
(Also Part II, Sections 811(k), 1005, Regulations 105, Section 81.10.)

In valuing the stock of closely held corporations, or the stock of corporations where market quotations are not available, all other available financial data, as well as all relevant factors affecting the fair market value must be considered for estate tax and gift tax purposes. No general formula may be given that is applicable to the many different valuation situations arising in the valuation of such stock. However, the general approach, methods, and factors which must be considered in valuing such securities are outlined.

Revenue Ruling 54-77, C.B. 1954-1, 187, superseded.

[Text]

SECTION 1. PURPOSE.

The purpose of this Revenue Ruling is to outline and review in general the approach, methods and factors to be considered in valuing shares of the capital stock of closely held corporations for estate tax and gift tax purposes. The methods discussed herein will apply likewise to the valuation of corporate stocks on which market quotations are either unavailable or are of such scarcity that they do not reflect the fair market value.

SEC. 2. BACKGROUND AND DEFINITIONS.

.01 All valuations must be made in accordance with the applicable provisions of the Internal Revenue Code of 1954 and the Federal Estate Tax and Gift Tax Regulations. Sections 2031(a), 2032 and 2512(a) of the 1954 Code (sections 811 and 1005 of the 1939 Code) require that the property to be included in the gross estate, or made the subject of a gift, shall be taxed on the basis of the value of the property at the time of death of the decedent, the alternate date if so elected, or the date of gift.

.02 Section 20.2031-1(b) of the Estate Tax Regulations (section 81.10 of the Estate Tax Regulations 105) and section 25.2512-1 of the Gift Tax Regulations (section 86.19 of Gift Tax Regulations 108) define fair market value, in effect, as the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts. Court decisions frequently state in addition that the hypothetical buyer and seller are assumed to be able, as well as willing, to trade and to be well informed about the property and concerning the market for such property.

.03 Closely held corporations are those corporations the shares of which are owned by a relatively limited number of stockholders. Often the entire stock issue is held by one family. The result of this situation is

that little, if any, trading in the shares takes place. There is, therefore, no established market for the stock and such sales as occur at irregular intervals seldom reflect all of the elements of a representative transaction as defined by the term "fair market value."

SEC. 3. APPROACH TO VALUATION.

.01 A determination of fair market value, being a question of fact, will depend upon the circumstances in each case. No formula can be devised that will be generally applicable to the multitude of different valuation issues arising in estate and gift tax cases. Often, an appraiser will find wide differences of opinion as to the fair market value of a particular stock. In resolving such differences, he should maintain a reasonable attitude in recognition of the fact that valuation is not an exact science. A sound valuation will be based upon all the relevant facts, but the elements of common sense, informed judgment and reasonableness must enter into the process of weighing those facts and determining their aggregate significance.

.02 The fair market value of specific shares of stock will vary as general economic conditions change from "normal" to "boom" or "depression," that is, according to the degree of optimism or pessimism with which the investing public regards the future at the required date of appraisal. Uncertainty as to the stability or continuity of the future income from a property decreases its value by increasing the risk of loss of earnings and value in the future. The value of shares of stock of a company with very uncertain future prospects is highly speculative. The appraiser must exercise his judgment as to the degree of risk attaching to the business of the corporation which issued the stock, but that judgment must be related to all of the other factors affecting value.

.03 Valuation of securities is, in essence, a prophesy as to the future and must be based on facts available at the required date of appraisal. As a generalization, the prices of stocks which are traded in volume in a free and active market by informed persons best reflect the consensus of the investing public as to what the future holds for the corporations and industries represented. When a stock is closely held, is traded infrequently, or is traded in an erratic market, some other measure of value must be used. In many instances, the next best measure may be found in the prices at which the stocks of companies engaged in the same or a similar line of business are selling in a free and open market.

SEC. 4. FACTORS TO CONSIDER.

.01 It is advisable to emphasize that in the valuation of the stock of closely held corporations or the stock of corporations where market quotations are either lacking or too scarce to be recognized, all available financial data, as well as all relevant factors affecting the fair market value, should be considered. The following factors, although not all-inclusive are fundamental and require careful analysis in each case:

(a) The nature of the business and the history of the enterprise from its inception.

(b) The economic outlook in general and the condition and outlook of the specific industry in particular.

(c) The book value of the stock and the financial condition of the business.

(d) The earning capacity of the company.

(e) The dividend-paying capacity.

(f) Whether or not the enterprise has goodwill or other intangible value.

(g) Sales of the stock and the size of the block of stock to be valued.

(h) The market price of stocks of corporations engaged in the same or a similar line of business having their stocks actively traded in a free and open market, either on an exchange or over-the-counter.

.02 The following is a brief discussion of each of the foregoing factors:

(a) The history of a corporate enterprise will show its past stability or instability, its growth or lack of growth, the diversity or lack of diversity of its operations, and other facts needed to form an opinion of the degree of risk involved in the business. For an enterprise which changed its form of organization but carried on the same of closely similar operations of its predecessor, the history of the former enterprise should be considered. The detail to be considered should increase with approach to the required date of appraisal, since recent events are of greatest help in predicting the future; but a study of gross and net income, and of dividends covering a long prior period, is highly desirable. The history to be studied should include, but need not be limited to, the nature of the business, its products or services, its operating and investment assets, capital structure, plant facilities, sales records and management, all of which should be considered as of the date of the appraisal, with due regard for recent significant changes. Events of the past that are unlikely to recur in the future should be discounted, since value has a close relation to future expectancy.

(b) A sound appraisal of a closely held stock must consider current and prospective economic conditions as of the date of appraisal, both in the national economy and in the industry or industries with which the corporation is allied. It is important to know that the company is more or less successful than its competitors in the same industry, or that it is maintaining a stable position with respect to competitors. Equal or even greater significance may attach to the ability of the industry with which the company is allied to compete with other industries. Prospective competition which has not been a factor in prior years should be given careful attention. For example, high profits due to the novelty of its product and the lack of competition often lead to increasing competition. The public's appraisal of the future prospects of competitive industries or of competitors within an industry may be indicated by price trends in the markets for commodities and for securities. The loss of the manager of a so-called "one-man" business may have a depressing effect upon the value of the stock of such business, particularly if there is a lack of trained personnel capable of succeeding to the management of the enterprise. In valuing the stock of this type of business, therefore, the effect of

the loss of the manager on the future expectancy of the business, and the absence of management-succession potentialities are pertinent factors to be taken into consideration. On the other hand, there may be factors which offset, in whole or in part, the loss of the manager's services. For instance, the nature of the business and of its assets may be such that they will not be impaired by the loss of the manager. Furthermore, the loss may be adequately covered by life insurance, or competent management might be employed on the basis of the consideration paid for the former manager's services. These, or other offsetting factors, if found to exist, should be carefully weighed against the loss of the manager's services in valuing the stock of the enterprise.

(c) Balance sheets should be obtained, preferably in the form of comparative annual statements for two or more years immediately preceding the date of appraisal, together with a balance sheet at the end of the month preceding that date, if corporate accounting will permit. Any balance sheet descriptions that are not self-explanatory, and balance sheet items comprehending diverse assets or liabilities, should be clarified in essential detail by supporting supplemental schedules. These statements usually will disclose to the appraiser (1) liquid position (ratio of current assets to current liabilities); (2) gross and net book value of principal classes of fixed assets; (3) working capital; (4) long-term indebtedness; (5) capital structure; and (6) net worth. Consideration also should be given to any assets not essential to the operation of the business, such as investments in securities, real estate, etc. In general, such nonoperating assets will command a lower rate of return than do the operating assets, although in exceptional cases the reverse may be true. In computing the book value per share of stock, assets of the investment type should be revalued on the basis of their market price and the book value adjusted accordingly. Comparison of the company's balance sheets over several years may reveal, among other facts, such developments as the acquisition of additional production facilities or subsidiary companies, improvement in financial position, and details as to recapitalizations and other changes in the capital structure of the corporation. If the corporation has more than one class of stock outstanding, the charter or certificate of incorporation should be examined to ascertain the explicit rights and privileges of the various stock issues including: (1) voting powers, (2) preference as to dividends, and (3) preference as to assets in the event of liquidation.

(d) Detailed profit-and-loss statements should be obtained and considered for a representative period immediately prior to the required date of appraisal, preferably five or more years. Such statements should show (1) gross income by principal items; (2) principal deductions from gross income including major prior items of operating expenses, interest and other expense on each item of long-term debt, depreciation and depletion if such deductions are made, officers' salaries, in total if they appear to be reasonable or in detail if they seem to be excessive, contributions (whether or not deductible for tax purposes) that the nature of its business and its community position require the corporation to make, and taxes by principal items, including income and excess profits taxes; (3)

net income available for dividends; (4) rates and amounts of dividends paid on each class of stock; (5) remaining amount carried to surplus; and (6) adjustments to, and reconciliation with, surplus as stated on the balance sheet. With profit and loss statements of this character available, the appraiser should be able to separate recurrent from nonrecurrent items of income and expense, to distinguish between operating income and investment income, and to ascertain whether or not any line of business in which the company is engaged is operated consistently at a loss and might be abandoned with benefit to the company. The percentage of earnings retained for business expansion should be noted when dividend-paying capacity in considered. Potential future income is a major factor in many valuations of closely-held stocks, and all information concerning past income which will be helpful in predicting the future should be secured. Prior earnings records usually are the most reliable guide as to the future expectancy, but resort to arbitrary five-or-ten-year averages without regard to current trends or future prospects will not produce a realistic valuation. If, for instance, a record of progressively increasing or decreasing net income is found, then greater weight may be accorded the most recent years' profits in estimating earning power. It will be helpful, in judging risk and the extent to which a business is a marginal operator, to consider deductions from income and net income in terms of percentage of sales. Major categories of cost and expense to be so analyzed include the consumption of raw materials and supplies in the case of manufacturers, processors and fabricators; the cost of purchased merchandise in the case of merchants; utility services; insurance; taxes; depletion of depreciation; and interest.

(e) Primary consideration should be given to the dividend-paying capacity of the company rather than to dividends actually paid in the past. Recognition must be given to the necessity of retaining a reasonable portion of profits in a company to meet competition. Dividend-paying capacity is a factor that must be considered in an appraisal, but dividends actually paid in the past may not have any relation to dividend-paying capacity. Specifically, the dividends paid by a closely held family company may be measured by the income needs of the stockholders or by their desire to avoid taxes on dividend receipts, instead of by the ability of the company to pay dividends. Where an actual or effective controlling interest in a corporation is to be valued, the dividend factor is not a material element, since the payment of such dividends is discretionary with the controlling stockholders. The individual or group in control can substitute salaries and bonuses for dividends, thus reducing net income and understating the dividend-paying capacity of the company. It follows, therefore, that dividends are less reliable criteria of fair market value than other applicable factors.

(f) In the final analysis, goodwill is based upon earning capacity. The presence of goodwill and its value, therefore, rests upon the excess of net earnings over and above a fair return on the net tangible assets. While the element of goodwill may be based primarily on earnings, such factors as the prestige and renown of the business, the ownership of a trade or brand name, and a record of successful operation over a pro-

longed period in a particular locality, also may furnish support for the inclusion of intangible value. In some instances it may not be possible to make a separate appraisal of the tangible and intangible assets of the businesses. The enterprise has a value as an entity. Whatever intangible value there is, which is supportable by the facts, may be measured by the amount by which the appraised value of the tangible assets exceeds the net book value of such assets.

(g) Sales of stock of a closely held corporation should be carefully investigated to determine whether they represent transactions at arm's length. Forced or distress sales do not ordinarily reflect fair market value nor do isolated sales in small amounts necessarily control as the measure of value. This is especially true in the valuation of a controlling interest in a corporation. Since, in the case of closely held stocks, no prevailing market prices are available, there is no basis for making an adjustment for blockage. It follows, therefore, that such stocks should be valued upon a consideration of all the evidence affecting the fair market value. The size of the block of stock itself is a relevant factor to be considered. Although it is true that a minority interest in an unlisted corporation's stock is more difficult to sell than a similar block of listed stock, it is equally true that control of a corporation, either actual or in effect, representing as it does an added element of value, may justify a higher value for a specific block of stock.

(h) Section 2031(b) of the Code states, in effect, that in valuing unlisted securities the value of stock or securities of corporations engaged in the same or a similar line of business which are listed on an exchange should be taken into consideration along with all other factors. An important consideration is that the corporations to be used for comparisons have capital stocks which are actively traded by the public. In accordance with section 2031(b) of the Code, stocks listed on an exchange are to be considered first. However, if sufficient comparable companies whose stocks are listed on an exchange cannot be found, other comparable companies which have stocks actively traded in on the over-the-counter market also may be used. The essential factor is that whether the stocks are sold on an exchange or over-the-counter there is evidence of an active, free public market for the stock as of the valuation date. In selecting corporations for comparative purposes, care should be taken to use only comparable companies. Although the only restrictive requirement as to comparable corporations specified in the statute is that their lines of business be the same or similar, yet it is obvious that consideration must be given to other relevant factors in order that the most valid comparison possible will be obtained. For illustration, a corporation having one or more issues of preferred stock, bonds or debentures in addition to its common stock should not be considered to be directly comparable to one having only common stock outstanding. In like manner, a company with a declining business and decreasing markets is not comparable to one with a record of current progress and market expansion.

SEC. 5. WEIGHT TO BE ACCORDED VARIOUS FACTORS.

The valuation of closely held corporate stock entails the consideration of all relevant factors as stated in section 4. Depending upon the circumstances in each case, certain factors may carry more weight than others because of the nature of the company's business. To illustrate:

(a) Earnings may be the most important criterion of value in some cases whereas asset value will receive primary consideration in others. In general, the appraiser will accord primary consideration to earnings when valuing stocks of companies which sell products or services to the public; conversely, in the investment or holding type of company, the appraiser may accord the greatest weight to the assets underlying the security to be valued.

(b) The value of the stock of a closely held investment or real estate holding company, whether or not family owned, is closely related to the value of the assets underlying the stock. For companies of this type the appraiser should determine the fair market values of the assets of the company. Operating expenses of such a company and the cost of liquidating it, if any, merit consideration when appraising the relative values of the stock and the underlying assets. The market values of the underlying assets give due weight to potential earnings and dividends of the particular items of property underlying the stock, capitalized at rates deemed proper by the investing public at the date of appraisal. A current appraisal by the investing public should be superior to the retrospective opinion of an individual. For these reasons, adjusted net worth should be accorded greater weight in valuing the stock of a closely held investment or real estate holding company, whether or not family owned, than any of the other customary yardsticks of appraisal, such as earnings and dividend paying capacity.

SEC. 6. CAPITALIZATION RATES.

In the application of certain fundamental valuation factors, such as earnings and dividends, it is necessary to capitalize the average or current results at some appropriate rate. A determination of the proper capitalization rate presents one of the most difficult problems in valuation. That there is no ready or simple solution will become apparent by a cursory check of the rates of return and dividend yields in terms of the selling prices of corporate shares listed on the major exchanges of the country. Wide variations will be found even for companies in the same industry. Moreover, the ratio will fluctuate from year to year depending upon economic conditions. Thus, no standard tables of capitalization rates applicable to closely held corporations can be formulated. Among the more important factors to be taken into consideration in deciding upon a capitalization rate in a particular case are: (1) the nature of the business; (2) the risk involved; and (3) the stability or irregularity of earnings.

SEC. 7. AVERAGE OF FACTORS.

Because valuations cannot be made on the basis of a prescribed formula, there is no means whereby the various applicable factors in a par-

ticular case can be assigned mathematical weights in deriving the fair market value. For this reason, no useful purpose is served by taking an average of several factors (for example, book value, capitalized earnings and capitalized dividends) and basing the valuation on the result. Such a process excludes active consideration of other pertinent factors, and the end result cannot be supported by a realistic application of the significant facts in the case except by mere chance.

SEC. 8. RESTRICTIVE AGREEMENTS.

Frequently, in the valuation of closely held stock for estate and gift tax purposes, it will be found that the stock is subject to an agreement restricting its sale or transfer. Where shares of stock were acquired by a decedent subject to an option reserved by the issuing corporation to repurchase at a certain price, the option price is usually accepted as the fair market value for estate tax purposes. See Rev. Rul. 54-76, C.B. 1954-1, 194. However, in such case the option price is not determinative of fair market value for gift tax purposes. Where the option, or buy and sell agreement, is the result of voluntary action by the stockholders and is binding during the life as well as at the death of the stockholders, such agreement may or may not, depending upon the circumstances of each case, fix the value for estate tax purposes. However, such agreement is a factor to be considered, with other relevant factors, in determining fair market value. Where the stockholder is free to dispose of his shares during life and the option is to become effective only upon his death, the fair market value is not limited to the option price. It is always necessary to consider the relationship of the parties, the relative number of shares held by the decedent, and other material facts, to determine whether the agreement represents a bonafide business arrangement or is a device to pass the decedent's shares to the natural objects of his bounty for less than an adequate and full consideration in money or money's worth.[31]

REVENUE RULING 77-287

Revenue Ruling 77-287 provides guidance for the valuation of restricted stock for estate and gift tax purposes. Restricted stock represents shares of stock that cannot be immediately resold because they are restricted from resale pursuant to federal securities laws. Revenue Ruling 77-287 identifies five types of such securities:

1. *Restricted Securities*. "Defined in Rule 144 adopted by the SEC as 'securities acquired directly or indirectly from the issuer thereof, or from an affiliate of such issuer, in a transaction or chain of transactions not involving any public offering.'"
2. *Unregistered Securities*. "Securities with respect to which a registration statement, providing full disclosure by the issuing corporation, has not been filed with the SEC pursuant to the Securities Act of 1933."
3. *Investment Letter Stock and Letter Stock*. "Shares of stock that have been issued by a corporation without the benefit of filing a registration statement with the

[31] Rev. Rul. 59-60, 1959-1 CB 237.

SEC. Such stock is subject to resale and transfer restrictions set forth in a letter agreement requested by the issuer and signed by the buyer of the stock when the stock is delivered."

4. *Control Stock*. "Shares of stock have been held or are being held by an officer, director, or other person close to the management of the corporation. These persons are subject to certain requirements pursuant to SEC rules upon resale of shares they own in such corporations."
5. *Private Placement Stock*. "Stock has been placed with an institution or other investor who will presumably hold it for a long period and ultimately arrange to have the stock registered if it is to be offered to the general public."[32]

Securities Industry Practice in Valuing Restricted Securities

The valuation of restricted stocks, as opposed to that of their unrestricted counterparts, is problematical because the restricted stocks are not actively traded on a public exchange; hence their fair market value cannot readily be determined. Some guidance for measuring the discounts for restricted securities is provided by the results of the *Institutional Investors Study* conducted by the Securities and Exchange Commission (SEC) and published in 1971. The SEC performed the study in order to assess the effect of institutional purchases, sales, and holdings on the securities market. The study analyzed actual transactions in the marketplace for the period January 1, 1966, to June 30, 1969, and determined that the magnitude of the discounts allowed for restricted securities from the trading price of unrestricted securities was based on four factors:

1. *Earnings*. "Earnings played the major part in establishing the ultimate discounts at which these stocks were sold from the current market price. Apparently earnings patterns, rather than sales patterns, determine the degree of risk of an investment."
2. *Sales*. "The results of the study generally indicate that the companies with the lowest dollar amount of sales during the test period accounted for most of the transactions involving the highest discount rates, while they accounted for only a small portion of all transactions involving the lowest discount rates."
3. *Trading Market*. "The market in which publicly held securities are traded also reflects variances in the amount of discount that is applied to restricted securities purchases. According to the study, discount rates were greatest on restricted stocks with unrestricted counterparts traded over-the-counter, followed by those with unrestricted counterparts listed on the American Stock Exchange, while the discount rates for those stocks with unrestricted counterparts listed on the New York Stock Exchange were the smallest."
4. *Resale Agreement Provisions*. "Resale agreement provisions often affect the size of the discount. The discount from the market price provides the main incentive for a potential buyer to acquire restricted securities. In judging the opportunity cost of freezing funds, the purchaser is analyzing two separate factors. The first factor is the risk that underlying value of the stock will change in a way that,

[32] Rev. Rul. 77-287, 1977-2 CB 319, Sec. 3.02.

absent the restrictive provisions, would have prompted a decision to sell. The second factor is the risk that the contemplated means of legally disposing of the stock may not materialize. From the seller's point of view, a discount is justified where the seller is relieved of the expenses of registration and public distribution, as well as of the risk that the market will adversely change before the offering is completed. The ultimate agreement between buyer and seller is a reflection of these and other considerations. Relative bargaining strengths of the parties to the agreement are major considerations that influence the resale terms and consequently the size of discounts in restricted securities transactions. Certain provisions are often found in agreements between buyers and sellers that affect the size of discounts at which restricted stocks are sold."[33]

Facts and Circumstances Material to Valuation of Restricted Securities

When valuing restricted stock, Revenue Ruling 77-287 indicates that the factors enumerated in Revenue Ruling 59-60 should be considered, along with the following:

> (a) A copy of any declaration of trust, trust agreement, and any other agreements relating to the shares of restricted stock;
>
> (b) A copy of any document showing any offers to buy or sell or indications of interest in buying or selling the restricted shares;
>
> (c) The latest prospectus of the company;
>
> (d) Annual reports of the company for 3 to 5 years preceding the valuation date;
>
> (e) The trading prices and trading volume of the related class of traded securities 1 month preceding the valuation date, if they are traded on a stock exchange (if traded over-the-counter, prices may be obtained from the National Quotations Bureau, the National Association of Securities Dealers Automated Quotations (NASDAQ), or sometimes from broker-dealers making markets in the shares);
>
> (f) The relationship of the parties to the agreements concerning the restricted stock, such as whether they are members of the immediate family or perhaps whether they are officers or directors of the company; and
>
> (g) Whether the interest being valued represents a majority or minority ownership.[34]

Weighing Facts and Circumstances Material to Restricted Stock Valuation

Like Revenue Ruling 59-60, Revenue Ruling 77-287 notes that certain of these factors may carry more weight than others. For example, earnings, net assets, and net sales should be given primary consideration in determining an appropriate discount

[33] *Ibid.,* Sec. 4.02.
[34] *Ibid.,* Sec. 5.02.

for restricted securities. Earnings and net sales should be weighted more heavily for manufacturing, producing, and distributing companies; however, more weight should be given to net assets for investment or holding companies.

Resale provisions found in the restriction agreements also should be analyzed to determine the magnitude of any discount. Time and expense are key considerations—the longer the buyer of the shares must wait to liquidate the shares, the greater the discount. In addition, the discount also will be greater if the buyer must bear the expense of registration. However, if provisions make it possible for the buyer to "piggyback" shares at a subsequent offering, the discount will be smaller.

The relative negotiation strengths of the buyer and seller also may affect the size of the discount.

The actual trading results for freely tradable securities that are the same class as the restricted securities may be significant in determining the size of discount. The value for publicly traded stock is usually higher than that of closely held stock. In addition, the type of exchange in which the unrestricted securities are traded must be considered.

Additional discussion of the valuation of restricted stock is presented in Chapter 23.

REV-RUL, Valuation of securities restricted from immediate resale, Rev. Rul. 77-287, 1977-2 CB 319, (Jan. 01, 1977)
Rev. Rul. 77-287, 1977-2 CB 319

SECTION 2031.—DEFINITION OF GROSS ESTATE
26 CFR 20.2031-2: Valuation of stocks and bonds.
(Also Sections 170, 2032, 2512; 1.170A-1, 20,2032-1, 25.2512-2.)
[IRS Headnote] Valuation of securities restricted from immediate resale.—

Guidelines are set forth for the valuation, for Federal tax purposes, of securities that cannot be immediately resold because they are restricted from resale pursuant to Federal securities laws; Rev. Rul. 59-60 amplified.

[Text]

SECTION 1. PURPOSE.

The purpose of this Revenue Ruling is to amplify Rev. Rul. 59-60, 1959-1 C.B. 237, as modified by Rev. Rul. 65-193, 1965-2 C.B. 370, and to provide information and guidance to taxpayers, Internal Revenue Service personnel, and others concerned with the valuation, for Federal tax purposes, of securities that cannot be immediately resold because they are restricted from resale pursuant to Federal securities laws. This guidance is applicable only in cases where it is not inconsistent with valuation requirements of the Internal Revenue Code of 1954 or the regulations there under. Further, this ruling does not establish the time at which property shall be valued.

SEC. 2. NATURE OF THE PROBLEM.

It frequently becomes necessary to establish the fair market value of stock that has not been registered for public trading when the issuing company has stock of the same class that is actively traded in one or more securities markets. The problem is to determine the difference in fair market value between the registered shares that are actively traded and the unregistered shares. This problem is often encountered in estate and gift tax cases. However, it is sometimes encountered when unregistered shares are issued in exchange for assets or the stock of an acquired company.

SEC. 3. BACKGROUND AND DEFINITIONS.

.01 The Service outlined and review[ed] in general the approach, methods, and factors to be considered in valuing shares of closely held corporate stock for estate and gift tax purposes in Rev. Rul. 59-60, as modified by Rev. Rul. 65-193. The provisions of Rev. Rul. 59-60, as modified, were extended to the valuation of corporate securities for income and other tax purposes by Rev. Rul. 68-609, 1968-2 C.B. 327.

.02 There are several terms currently in use in the securities industry that denote restrictions imposed on the resale and transfer of certain securities. The term frequently used to describe these securities is "restricted securities," but they are sometimes referred to as "unregistered securities," "investment letter stock," "control stock," or "private placement stock." Frequently these terms are used interchangeably. They all indicate that these particular securities cannot lawfully be distributed to the general public until a registration statement relating to the corporation underlying the securities has been filed, and has also become effective under the rules promulgated and enforced by the United States Securities & Exchange Commission (SEC) pursuant to the Federal securities laws. The following represents a more refined definition of each of the following terms along with two other terms—"exempted securities" and "exempted transactions."

(a) The term "restricted securities" is defined in Rule 144 adopted by the SEC as "securities acquired directly or indirectly from the issuer thereof, or from an affiliate of such issuer, in a transaction or chain of transactions not involving any public offering."

(b) The term "unregistered securities" refers to those securities with respect to which a registration statement, providing full disclosure by the issuing corporation, has not been filed with the SEC pursuant to the Securities Act of 1933. The registration statement is a condition precedent to a public distribution of securities in interstate commerce and is aimed at providing the prospective investor with a factual basis for sound judgment in making investment decisions.

(c) The terms "investment letter stock" and "letter stock" denote shares of stock that have been issued by a corporation without the benefit of filing a registration statement with the SEC. Such stock is subject to resale and transfer restrictions set forth in a letter agreement requested by the issuer and signed by the buyer of the stock when the stock is delivered. Such stock may be found in the hands of either individual investors or institutional investors.

(d) The term "control stock" indicates that the shares of stock have been held or are being held by an officer, director, or other person close to the management of the corporation. These persons are subject to certain requirements pursuant to SEC rules upon resale of shares they own in such corporations.

(e) The term "private placement stock" indicates that the stock has been placed with an institution or other investor who will presumably hold it for a long period and ultimately arrange to have the stock registered if it is to be offered to the general public. Such stock may or may not be subject to a letter agreement. Private placements of stock are exempted from the registration and prospectus provisions of the Securities Act of 1933.

(f) The term "exempted securities" refers to those classes of securities that are expressly excluded from the registration provisions of the Securities Act of 1933 and the distribution provisions of the Securities Exchange Act of 1934.

(g) The term "exempted transactions" refers to certain sales or distributions of securities that do not involve a public offering and are excluded from the registration and prospectus provisions of the Securities Act of 1933 and distribution provisions of the Securities Exchange Act of 1934. The exempted status makes it unnecessary for issuers of securities to go through the registration process.

SEC. 4. SECURITIES INDUSTRY PRACTICE IN VALUING RESTRICTED SECURITIES.

.01 *Investment Company Valuation Practices.* The Investment Company Act of 1940 requires open-end investment companies to publish the valuation of their portfolio securities daily. Some of these companies have portfolios containing restricted securities, but also have unrestricted securities of the same class traded on a securities exchange. In recent years the number of restricted securities in such portfolios has increased. The following methods have been used by investment companies in the valuation of such restricted securities:

(a) Current market price of the unrestricted stock less a constant percentage discount based on purchase discount;

(b) Current market price of unrestricted stock less a constant percentage discount different from purchase discount;

(c) Current market price of the unrestricted stock less a discount amortized over a fixed period;

(d) Current market price of the unrestricted stock; and

(e) Cost of the restricted stock until it is registered.

The SEC ruled in its Investment Company Act Release No. 5847, dated October 21, 1969, that there can be no automatic formula by which an investment company can value the restricted securities in its portfolios. Rather, the SEC has determined that it is the responsibility of the board of directors of the particular investment company to determine the "fair value" of each issue of restricted securities in good faith.

.02 *Institutional Investors Study.* Pursuant to Congressional direction, the SEC undertook an analysis of the purchasers, sales, and hold-

ing of securities by financial institutions, in order to determine the effect of institutional activity upon the securities market. The study report was published in eight volumes in March 1971. The fifth volume provides an analysis of restricted securities and deals with such items as the characteristics of the restricted securities purchasers and issuers, the size of transactions (dollars and shares), the marketability discounts on different trading markets, and the resale provisions. This research project provides some guidance for measuring the discount in that it contains information, based on the actual experience of the marketplace, showing that, during the period surveyed (January 1, 1966, through June 30, 1969), the amount of discount allowed for restricted securities from the trading price of the unrestricted securities was generally related to the following four factors.

(a) *Earnings*. Earnings and sales consistently have a significant influence on the size of restricted securities discounts according to the study. Earnings played the major part in establishing the ultimate discounts at which these stocks were sold from the current market price. Apparently earnings patterns, rather than sales patterns, determine the degree of risk of an investment.

(b) *Sales*. The dollar amount of sales of issuers' securities also has a major influence on the amount of discount at which restricted securities sell from the current market price. The results of the study generally indicate that the companies with the lowest dollar amount of sales during the test period accounted for most of the transactions involving the highest discount rates, while they accounted for only a small portion of all transactions involving the lowest discount rates.

(c) *Trading Market*. The market in which publicly held securities are traded also reflects variances in the amount of discount that is applied to restricted securities purchases. According to the study, discount rates were greatest on restricted stocks with unrestricted counterparts traded over-the-counter, followed by those with unrestricted counterparts listed on the American Stock Exchange, while the discount rates for those stocks with unrestricted counterparts listed on the New York Stock Exchange were the smallest.

(d) *Resale Agreement Provisions*. Resale agreement provisions often affect the size of the discount. The discount from the market price provides the main incentive for a potential buyer to acquire restricted securities. In judging the opportunity cost of freezing funds, the purchaser is analyzing two separate factors. The first factor is the risk that underlying value of the stock will change in a way that, absent the restrictive provisions, would have prompted a decision to sell. The second factor is the risk that the contemplated means of legally disposing of the stock may not materialize. From the seller's point of view, a discount is justified where the seller is relieved of the expenses of registration and public distribution, as well as of the risk that the market will adversely change before the offering is completed. The ultimate agreement between buyer and seller is a reflection of these and other considerations. Relative bargaining strengths of the parties to the agreement are major considerations that influence the resale terms and consequently the size of

discounts in restricted securities transactions. Certain provisions are often found in agreements between buyers and sellers that affect the size of discounts at which restricted stocks are sold. Several such provisions follow, all of which, other than number (3), would tend to reduce the size of the discount:

(1) A provision giving the buyer an option to "piggyback," that is, to register restricted stock with the next registration statement, if any, filed by the issuer with the SEC;

(2) A provision giving the buyer an option to require registration at the seller's expense;

(3) A provision giving the buyer an option to require registration, but only at the buyer's own expense;

(4) A provision giving the buyer a right to receive continuous disclosure of information about the issuer from the seller;

(5) A provision giving the buyer a right to select one or more directors of the issuer;

(6) A provision giving the buyer an option to purchase additional shares of the issuer's stock; and

(7) A provision giving the buyer the right to have a greater voice in operations of the issuer, if the issuer does not meet previously agreed upon operating standards.

Institutional buyers can and often do obtain many of these rights and options from the sellers of restricted securities, and naturally, the more rights the buyer can acquire, the lower the buyer's risk is going to be, thereby reducing the buyer's discount as well. Smaller buyers may not be able to negotiate the large discounts or the rights and options that volume buyers are able to negotiate.

.03 *Summary.* A variety of methods have been used by the securities industry to value restricted securities. The SEC rejects all automatic or mechanical solutions to the valuation of restricted securities, and prefers, in the case of the valuation of investment company portfolio stocks, to rely upon good faith valuations by the board of directors of each company. The study made by the SEC found that restricted securities *generally* are issued at a discount from the market value of freely tradable securities.

SEC. 5. FACTS AND CIRCUMSTANCES MATERIAL TO VALUATION OF RESTRICTED SECURITIES.

.01 Frequently, a company has a class of stock that cannot be traded publicly. The reason such stock cannot be traded may arise from the securities statutes, as in the case of an "investment letter" restriction; it may arise from a corporate charter restriction, or perhaps from a trust agreement restriction. In such cases, certain documents and facts should be obtained for analysis.

.02 The following documents and facts, when used in conjunction with those discussed in Section 4 of Rev. Rul. 59-60, will be useful in the valuation of restricted securities:

(a) A copy of any declaration of trust, trust agreement, and any other agreements relating to the shares of restricted stock;

(b) A copy of any document showing any offers to buy or sell or indications of interest in buying or selling the restricted shares;

(c) The latest prospectus of the company;

(d) Annual reports of the company for 3 to 5 years preceding the valuation date;

(e) The trading prices and trading volume of the related class of traded securities 1 month preceding the valuation date, if they are traded on a stock exchange (if traded over-the-counter, prices may be obtained from the National Quotations Bureau, the National Association of Securities Dealers Automated Quotations (NASDAQ), or sometimes from broker-dealers making markets in the shares);

(f) The relationship of the parties to the agreements concerning the restricted stock, such as whether they are members of the immediate family or perhaps whether they are officers or directors of the company; and

(g) Whether the interest being valued represents a majority or minority ownership.

SEC. 6. WEIGHING FACTS AND CIRCUMSTANCES MATERIAL TO RESTRICTED STOCK VALUATION.

All relevant facts and circumstances that bear upon the worth of restricted stock, including those set forth above in the preceding Sections 4 and 5, and those set forth in Section 4 of Rev. Rul. 59-60, must be taken into account in arriving at the fair market value of such securities. Depending on the circumstances of each case, certain factors may carry more weight than others. To illustrate:

.01 Earnings, net assets, and net sales must be given primary consideration in arriving at an appropriate discount for restricted securities from the freely traded shares. These are the elements of value that are always used by investors in making investment decisions. In some cases, one element may be more important than in other cases. In the case of manufacturing, producing, or distributing companies, primary weight must be accorded earnings and net sales; but in the case of investment or holding companies, primary weight must be given to the net assets of the company underlying the stock. In the former type of companies, value is more closely linked to past, present, and future earnings while in the latter type of companies, value is more closely linked to the existing net assets of the company. See the discussion in Section 5 of Rev. Rul. 59-60.

.02 Resale provisions found in the restriction agreements must be scrutinized and weighed to determine the amount of discount to apply to the preliminary fair market value of the company. The two elements of time and expense bear upon this discount; the longer the buyer of the shares must wait to liquidate the shares, the greater the discount. Moreover, if the provisions make it necessary for the buyer to bear the expense of registration, the greater the discount. However, if the provisions of the restricted stock agreement make it possible for the buyer to "piggyback" shares at the next offering, the discount would be smaller.

.03 The relative negotiation strengths of the buyer and seller of restricted stock may have a profound effect on the amount of discount.

For example, a tight money situation may cause the buyer to have the greater balance of negotiation strength in a transaction. However, in some cases the relative strengths may tend to cancel each other out.

.04 The market experience of freely tradable securities of the same class as the restricted securities is also significant in determining the amount of discount. Whether the shares are privately held or publicly traded affects the worth of the shares to the holder. Securities traded on a public market generally are worth more to investors than those that are not traded on a public market. Moreover, the type of public market in which the unrestricted securities are traded is to be given consideration.

SEC. 7. EFFECT ON OTHER DOCUMENTS.

Rev. Rul. 59-60, as modified by Rev. Rul. 65-193, is amplified.[35]

REVENUE RULING 83-120

Revenue Ruling 83-120 expands on Revenue Ruling 59-60 by providing additional guidance for the valuation of common stock of closely held companies as well as preferred stock for estate and gift tax purposes. Valuation issues relating to preferred and common stock often result from estate planning transactions involving situations where an owner's interest in common stock is converted to both preferred and common, with the preferred having a stated par value equal to a significant portion of the fair market value. The owner then gifts the common stock to a family member with the objective of transferring potential appreciation in the stock with minimal gift tax. This is a classic "freeze" transaction.

Approach to Valuation—Preferred Stock

Generally, the most important factors to consider when valuing preferred stock are the yield, dividend coverage, and liquidation preferences.

The adequacy of the *yield* should be determined by comparing the subject company's preferred stock dividend rate with that of a high-grade publicly traded stock. For purposes of identifying comparable publicly traded preferred stock to determine the yield required on closely held stock, factors such as similarity of the line of business, assets, liquidation preferences, and voting rights are typical considerations. All other factors being equal, if the yield on the subject company's preferred stock is lower than that of the comparable publicly traded stock, then the subject company stock value would be less than par. Also, if the interest rate on debt charged by the subject company's creditors is higher than the rate charged to those creditors' most creditworthy borrowers, then the yield on the subject company's preferred stock should be higher than the yield on high-quality preferred stock. A yield that is not higher reduces the value of the preferred stock. A fixed dividend rate and nonparticipation also affect the value of the preferred stock.[36]

The *coverage of dividends* by the corporation's earnings highlights the risk associated with the subject company's ability to pay the stated dividends on pre-

[35] Rev. Rul. 77-287, 1977-2 CB 319.

[36] Rev. Rul. 83-120, 1983-2 CB 170, Sec. 4.02.

ferred stock on a timely basis. The dividend coverage is measured by the ratio of the sum of earnings before interest and taxes (EBIT) to the sum of the total interest to be paid and the pretax earnings needed to pay the after-tax dividends. The ratio for the subject company preferred stock should be compared with the ratios for high-quality preferred stocks to determine whether the preferred stock has adequate coverage. If the coverage ratio is inadequate, the value of preferred stock should be lower than its par value. Also, if preferred dividends are not cumulative, it is questionable whether the stated dividends will be paid, and this stock will have a lower value than a cumulative preferred stock with the same yield, liquidation preference, and dividend coverage.[37]

The ability of the subject company to pay the full *liquidation preference* at liquidation also should be considered. This risk can be measured by the ratio of the excess of the fair market value of the subject company's assets over its liabilities to the aggregate liquidation preference. The resulting ratio for the subject company should be compared with the ratios for high-quality preferred stock to determine the adequacy of coverage.[38]

Other factors to be considered in valuing the preferred stock include:

- Existence of voting rights and control
- Peculiar covenants or provisions of the preferred stock that may inhibit the marketability of the stock or the power of the holder to enforce dividend or liquidation rights
- Redemption privileges[39]

Approach to Valuation—Common Stock

If the common stock has the exclusive right to the benefits of future appreciation of the value of the corporation (i.e., the preferred stock has a fixed rate of dividend and is nonparticipating), then the common stock usually has substantial value. The value of this right depends on the subject company's historical growth, the industry conditions, and economic conditions. Analysis of the other factors discussed in Revenue Ruling 59-60 will be required. In addition, the subject company's net income in excess of the stated dividends on the preferred stock at the time the preferred stock is issued will increase the value of the common stock. The value of the common stock also will be increased if the subject company reinvests its earnings.[40]

If the preferred stock has voting rights, and especially if the preferred stock also has control, the value of the preferred stock could increase and the value of the common stock could decrease. This change in value may be mitigated if the rights of common stockholders are protected under state law from actions by another class of shareholders, particularly where the common shareholders possess the power to disapprove a proposal to allow preferred stock to be converted into common stock.[41] Additional discussion of preferred stock valuations is presented in Chapter 23.

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[37] *Ibid.,* Sec. 4.03.
[38] *Ibid.,* Sec. 4.04.
[39] *Ibid.,* Sec. 4.05-4.07.
[40] *Ibid.,* Sec. 5.01.
[41] *Ibid.,* Sec. 5.02.

REV-RUL. Valuation; stock; closely held business, Rev. Rul. 83-120, 1983-2 CB 170, (Jan. 01, 1983)
Rev. Rul. 83-120, 1983-2 CB 170

SECTION 2512.—VALUATION OF GIFTS
26 CFR 25.2512-2: Stocks and bonds.
(Also Sections 305, 351, 354, 368, 2031; 1.305-5, 1.351-1, 1.354-1, 1.368-1, 20.2031-2.)

[IRS Headnote] Valuation; stock; closely held business.—
The significant factors in deriving the fair market value of preferred and common stock received in certain corporate reorganizations are discussed. Rev. Rul. 59-60 amplified.

[Text]

SECTION 1. PURPOSE.

The purpose of this Revenue Ruling is to amplify Rev. Rul. 59-60, 1959-1 C.B. 237, by specifying additional factors to be considered in valuing common and preferred stock of a closely held corporation for gift tax and other purposes in a recapitalization of closely held businesses. This type of valuation problem frequently arises with respect to estate planning transactions wherein an individual receives preferred stock with a stated par value equal to all or a large portion of the fair market value of the individual's former stock interest in a corporation. The individual also receives common stock which is then transferred, usually as a gift, to a relative.

SEC. 2. BACKGROUND.

.01 One of the frequent objectives of the type of transaction mentioned above is the transfer of the potential appreciation of an individual's stock interest in a corporation to relatives at a nominal or small gift tax cost. Achievement of this objective requires preferred stock having a fair market value equal to a large part of the fair market value of the individual's former stock interest and common stock having a nominal or small fair market value. The approach and factors described in this Revenue Ruling are directed toward ascertaining the true fair market value of the common and preferred stock and will usually result in the determination of a substantial fair market value for the common stock and a fair market value for the preferred stock which is substantially less than its par value.

.02 The type of transaction referred to above can arise in many different contexts. Some examples are:

(a) *A* owns 100 percent of the common stock (the only outstanding stock) of Z Corporation which has a fair market value of 10,500x. In a recapitalization described in section 368(a)(1)(E), *A* receives preferred stock with a par value of 10,000x and new common stock, which *A* then transfers to *A*'s son *B*.

(b) *A* owns some of the common stock of *Z* Corporation (or the stock of several corporations) the fair market value of which stock is 10,500x. *A* transfers this stock to a new corporation *X* in exchange for preferred stock of *X* corporation with a par value of 10,000x and common stock of corporation, which *A* then transfers to *A*'s son *B*.

(c) *A* owns 80 shares and his son *B* owns 20 shares of the common stock (the only stock outstanding) of *Z* Corporation. In a recapitalization described in section 368(a)(1)(E), *A* exchanges his 80 shares of common stock for 80 shares of new preferred stock of *Z* Corporation with a par value of 10,000x. *A*'s common stock had a fair market value of 10,000x.

SEC. 3. GENERAL APPROACH TO VALUATION.

Under section 25.2512-2(f)(2) of the Gift Tax Regulations, the fair market value of stock in a closely held corporation depends upon numerous factors, including the corporation's net worth, its prospective earning power, and its capacity to pay dividends. In addition, other relevant factors must be taken into account. *See* Rev. Rul. 59-60. The weight to be accorded any evidentiary factor depends on the circumstances of each case. *See* section 25.2512-2(f) of the Gift Tax Regulations.

SEC. 4. APPROACH TO VALUATION—PREFERRED STOCK.

.01 In general the most important factors to be considered in determining the value of preferred stock are its yield, dividend coverage and protection of its liquidation preference.

.02 Whether the yield of the preferred stock supports a valuation of the stock at par value depends in part on the adequacy of the dividend rate. The adequacy of the dividend rate should be determined by comparing its dividend rate with the dividend rate of high-grade publicly traded preferred stock. A lower yield than that of high-grade preferred stock indicates a preferred stock value of less than par. If the rate of interest charged by independent creditors to the corporation on loans is higher than the rate such independent creditors charge their most credit worthy borrowers, then the yield on the preferred stock should be correspondingly higher than the yield on high quality preferred stock. A yield which is not correspondingly higher reduces the value of the preferred stock. In addition, whether the preferred stock has a fixed dividend rate and is nonparticipating influences the value of the preferred stock. A publicly-traded preferred stock for a company having a similar business and similar assets with similar liquidation preferences, voting rights and other similar terms would be the ideal comparable for determining yield required in arms length transactions for closely held stock. Such ideal comparables will frequently not exist. In such circumstances, the most comparable publicly-traded issues should be selected for comparison and appropriate adjustments made for differing factors.

.03 The actual dividend rate on a preferred stock can be assumed to be its stated rate if the issuing corporation will be able to pay its stated dividends in a timely manner and will, in fact, pay such dividends. The risk that the corporation may be unable to timely pay the stated divi-

dends on the preferred stock can be measured by the coverage of such stated dividends by the corporation's earnings. Coverage of the dividend is measured by the ratio of the sum of pre-tax and pre-interest earnings to the sum of the total interest to be paid and the pre-tax earnings needed to pay the after-tax dividends. *Standard & Poor's Ratings Guide,* 58 (1979). Inadequate coverage exists where a decline in corporate profits would be likely to jeopardize the corporation's ability to pay dividends on the preferred stock. The ratio for the preferred stock in question should be compared with the ratios for high quality preferred stock to determine whether the preferred stock has adequate coverage. Prior earnings history is important in this determination. Inadequate coverage indicates that the value of preferred stock is lower than its par value. Moreover, the absence of a provision that preferred dividends are cumulative raises substantial questions concerning whether the stated dividend rate will, in fact, be paid. Accordingly, preferred stock with noncumulative dividend features will normally have a value substantially lower than a cumulative preferred stock with the same yield, liquidation preference and dividend coverage.

.04 Whether the issuing corporation will be able to pay the full liquidation preference at liquidation must be taken into account in determining fair market value. This risk can be measured by the protection afforded by the corporation's net assets. Such protection can be measured by the ratio of the excess of the current market value of the corporation's assets over its liabilities to the aggregate liquidation preference. The protection ratio should be compared with the ratios for high quality preferred stock to determine adequacy of coverage. Inadequate asset protection exists where any unforeseen business reverses would be likely to jeopardize the corporation's ability to pay the full liquidation preference to the holders of the preferred stock.

.05 Another factor to be considered in valuing the preferred stock is whether it has voting rights and, if so, whether the preferred stock has voting control. See, however, Section 5.02 below.

.06 Peculiar covenants or provisions of the preferred stock of a type not ordinarily found in publicly traded preferred stock should be carefully evaluated to determine the effects of such covenants on the value of the preferred stock. In general, if covenants would inhibit the marketability of the stock or the power of the holder to enforce dividend or liquidation rights, such provisions will reduce the value of the preferred stock by comparison to the value of preferred stock not containing such covenants or provisions.

.07 Whether the preferred stock contains a redemption privilege is another factor to be considered in determining the value of the preferred stock. The value of a redemption privilege triggered by death of the preferred shareholder will not exceed the present value of the redemption premium payable at the preferred shareholder's death (i.e., the present value of the excess of the redemption price over the fair market value of the preferred stock upon its issuance). The value of the redemption privilege should be reduced to reflect any risk that the corporation may not

possess sufficient assets to redeem its preferred stock at the stated redemption price. See .03 above.

SEC. 5. APPROACH TO VALUATION—COMMON STOCK.

.01 If the preferred stock has a fixed rate of dividend and is nonparticipating, the common stock has the exclusive right to the benefits of future appreciation of the value of the corporation. This right is valuable and usually warrants a determination that the common stock has substantial value. The actual value of this right depends upon the corporation's past growth experience, the economic condition of the industry in which the corporation operates, and general economic conditions. The factor to be used in capitalizing the corporation's prospective earnings must be determined after an analysis of numerous factors concerning the corporation and the economy as a whole. *See* Rev. Rul. 59-60, at page 243. In addition, after-tax earnings of the corporation at the time the preferred stock is issued in excess of the stated dividends on the preferred stock will increase the value of the common stock. Furthermore, a corporate policy of reinvesting earnings will also increase the value of the common stock.

.02 A factor to be considered in determining the value of the common stock is whether the preferred stock also has voting rights. Voting rights of the preferred stock, especially if the preferred stock has voting control, could under certain circumstances increase the value of the preferred stock and reduce the value of the common stock. This factor may be reduced in significance where the rights of common stockholders as a class are protected under state law from actions by another class of shareholders, see *Singer v. Magnavox Co.,* 380 A.2d 969 (Del. 1977), particularly where the common shareholders, as a class, are given the power to disapprove a proposal to allow preferred stock to be converted into common stock. See ABA-ALI Model Bus. Corp. Act, Section 60 (1969).

SEC. 6. EFFECT ON OTHER REVENUE RULINGS.

Rev. Rul. 59-60, as modified by Rev. Rul. 65-193, 1965-2 C.B. 370 and as amplified by Rev. Rul. 77-287, 1977-2 C.B. 319, and Rev. Rul. 80-213, 1980-2 C.B. 101, is further amplified.[42]

REVENUE RULING 93-12

Prior to 1993, the IRS took the position that that the ownership interests of family members should be aggregated for the purpose of determining whether or not a transferred interest was valued as a controlling or minority interest for gift tax purposes. This position was set forth in Revenue Ruling 81-253, which held that "ordinarily no minority discount will be allowed with respect to transfers of shares of stock among family members where, at the time of the transfer, control (either majority voting control or de facto control) of the corporation exists in the family."[43]

[42] Rev. Rul. 83-120, 1983-2 CB 170.
[43] Rev. Rul. 81-253, 1981-2 CB 187.

Petitioners often challenged this position on the basis that the definition of fair market value as defined in Treasury Regulation § 25.2512-1 and Revenue Ruling 59-60 presumes a hypothetical buyer and seller, whereas the IRS's position was based on the identity of specific individuals.

The Courts heard numerous cases on this issue, deciding in favor of the petitioners in many instances. Among these cases were *Estate of Bright v. United States,* 658 F.2d 999 (5th Cir. 1981), *Propstra v. United States,* 680 F.2d 1248 (9th Cir. 1982), *Estate of Andrews v. Commissioner,* 79 T.C. 938 (1982), and *Estate of Lee v. Commissioner,* 69 T.C. 860 (1978), *nonacq.,* 1980–2 C.B.2.

In 1993 the IRS finally acquiesced by revoking Revenue Ruling 81-253 and issuing Revenue Ruling 93-12. Citing the aforementioned cases, the IRS concluded that:

> in the case of a corporation with a single class of stock, notwithstanding the family relationship of the donor, the donee, and other shareholders, the shares of other family members will not be aggregated with the transferred shares to determine whether the transferred shares should be valued as part of a controlling interest.[44]

Revenue Ruling 93-12 was a landmark ruling in that it opened door for use of FLPs and other pass-through entities for estate planning purposes for family-owned businesses. See Chapters 12 and 23.

> **REV-RUL, FINH ¶12,521, Estate and gift taxes: Valuation: Closely held stock: Minority shareholder discount—Revenue Ruling 93-12, 1993-1 CB 202, I.R.B. 1993-7,13, (Feb. 16, 1993)**
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> Revenue Ruling 93-12, 1993-1 CB 202, I.R.B. 1993-7,13, February 16, 1993.1993-7 I.R.B. dated
>
> [*Code Secs. 2031 and 2512*]
>
> Estate and gift taxes: Valuation: Closely held stock: Minority shareholder discount.—Where a donor transferred 20 percent of the stock in a closely held corporation to each of the donor's five children, the factor of corporate control in the family was not considered in valuing each transferred interest for gift tax purposes. Consequently, a minority discount was not disallowed solely because the transferred interest, when aggregated with interests held by family members, was part of a controlling interest. Rev. Rul. 81-253 is revoked. Acquiescence is substituted for the nonacquiescence in issue one of *E. Lee Est.*, 1980-2 C.B. 2.
>
> ISSUE
>
> If a donor transfers shares in a corporation to each of the donor's children, is the factor of corporate control in the family to be considered in valuing each transferred interest, for purposes of section 2512 of the Internal Revenue Code?

[44] Rev. Rul. 93-12, 1993-1 CB 202.

FACTS

P owned all of the single outstanding class of stock of *X* corporation. *P* transferred all of *P*'s shares by making simultaneous gifts of 20 percent of the shares to each of *P*'s five children, *A*, *B*, *C*, *D*, and *E*.

LAW AND ANALYSIS

Section 2512(a) of the Code provides that the value of the property at the date of the gift shall be considered the amount of the gift.

Section 25.2512-1 of the Gift Tax Regulations provides that, if a gift is made in property, its value at the date of the gift shall be considered the amount of the gift. The value of the property is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell, and both having reasonable knowledge of relevant facts.

Section 25.2512-2(a) of the regulations provides that the value of stocks and bonds is the fair market value per share or bond on the date of the gift. Section 25.2512-2(f) provides that the degree of control of the business represented by the block of stock to be valued is among the factors to be considered in valuing stock where there are no sales prices or bona fide bid or asked prices.

Rev. Rul. 81-253, 1981-2 C.B. 187, holds that, ordinarily, no minority shareholder discount is allowed with respect to transfers of shares of stock between family members if, based upon a composite of the family members' interests at the time of the transfer, control (either majority voting control or de facto control through family relationships) of the corporation exists in the family unit. The ruling also states that the Service will not follow the decision of the Fifth Circuit in *Estate of Bright v. United States*, 658 F.2d 999 (5th Cir. 1981).

In *Bright*, the decedent's undivided community property interest in shares of stock, together with the corresponding undivided community property interest of the decedent's surviving spouse, constituted a control block of 55 percent of the shares of a corporation. The court held that, because the community-held shares were subject to a right of partition, the decedent's own interest was equivalent to 27.5 percent of the outstanding shares and, therefore, should be valued as a minority interest, even though the shares were to be held by the decedent's surviving spouse as trustee of a testamentary trust. *See also, Propstra v. United States*, 680 F.2d 1248 (9th Cir. 1982). In addition, *Estate of Andrews v. Commissioner*, 79 T.C. 938 (1982), and *Estate of Lee v. Commissioner,* 69 T.C. 860 (1978), *nonacq.*, 1980-2 C.B. 2, held that the corporation shares owned by other family members cannot be attributed to an individual family member for determining whether the individual family member's shares should be valued as the controlling interest of the corporation.

After further consideration of the position taken in Rev. Rul. 81-253, and in light of the cases noted above, the Service has concluded that, in the case of a corporation with a single class of stock, notwithstanding the family relationship of the donor, the donee, and other shareholders, the shares of other family members will not be aggregated with

the transferred shares to determine whether the transferred shares should be valued as part of a controlling interest.

In the present case, the minority interests transferred to *A*, *B*, *C*, *D*, and *E* should be valued for gift tax purposes without regard to the family relationship of the parties.

HOLDING

If a donor transfers shares in a corporation to each of the donor's children, the factor of corporate control in the family is not considered in valuing each transferred interest for purposes of section 2512 of the Code. For estate and gift tax valuation purposes, the Service will follow *Bright, Propstra, Andrews,* and *Lee* in not assuming that all voting power held by family members may be aggregated for purposes of determining whether the transferred shares should be valued as part of a controlling interest. Consequently, a minority discount will not be disallowed solely because a transferred interest, when aggregated with interests held by family members, would be a part of a controlling interest. This would be the case whether the donor held 100 percent or some lesser percentage of the stock immediately before the gift.

EFFECT ON OTHER DOCUMENTS

Rev. Rul. 81-253 is revoked. Acquiescence is substituted for the nonacquiescence in issue one of *Lee,* 1980-2 C.B. 2.[45]

VALUATIONS FOR INCOME TAXES

There are many different types of valuations for income tax planning and compliance purposes. The following list presents a summary of the most common types of taxable transactions requiring valuation services.[46]

- Deduction for abandoned or donated property
  - Abandonment losses
  - Casualty losses
  - Charitable contributions of property
- Receipt of noncash distributions from a business
  - Property distributed to employees as compensation
  - Property distributed to shareholders as dividends
  - Property distributed to shareholders as part of a liquidation
  - Employee stock options and other stock rights
- Recognition of income by a business
  - Rents received by a business in the form of property
  - Cancellation of indebtedness income

[45] *Ibid.*

[46] Shannon P. Pratt et al., *Valuing a Business: The Analysis and Appraisal of Closely Held Companies,* 4th ed. (New York: McGraw-Hill, 2000), p. 641.

- Conversion of property
  - Conversion of C to S corporations and calculation of related built-in gain taxes
  - Taxable or tax-free exchange of properties
- Tests of reasonableness
  - Reasonableness of compensation paid to owners
  - Undistributed excess accumulated earnings retained in a corporation
  - Reasonableness of transfer price for intercompany transfer of goods, services or properties
- Determination of tax basis for assets transferred into, purchased by, or transferred out of a business
  - Purchase price allocation

A more detailed discussion of selected types of income tax valuations follows. Obviously, tax laws and regulations change periodically. The reader is encouraged to research current information.

CHARITABLE CONTRIBUTIONS OF PROPERTY

Treasury Regulation § 1.170A-13(c)(3)(ii) addresses the contribution of closely held stock or other property whose value is greater than or equal to $10,000. Such contributions must be accompanied by a "qualified appraisal." A qualified appraisal:

1. Is made not earlier than 60 days prior to the date of contribution of the appraised property nor later than the date of the donor's tax return on which the deduction is claimed
2. Is prepared, signed, and dated by a qualified appraiser
3. Includes the following information:
   a. A description of the property
   b. In the case of tangible property, the physical condition of the property
   c. The date of the contribution
   d. The terms of any agreement entered into by the donor or donee that relates to the use, sale, or other disposition of the property contributed
   e. The name, address, and the identifying number of the qualified appraiser and the firm that employs the qualified appraiser
   f. The qualifications of the appraiser who signs the appraisal, including the appraiser's background, experience, education, and membership in professional appraisal associations
   g. A statement that the appraisal was prepared for income tax purposes
   h. The date on which the property was appraised
   i. The appraised fair market value of the property on the date of contribution
   j. The method of valuation used to determine the fair market value
   k. The specific basis for the valuation, such as specific comparable sales transactions[47]

A qualified appraisal must be prepared by an individual who satisfies the requirements of "qualified appraiser" as defined in Treasury Regulation § 1.170A-13(c)(5). These requirements state:

1. The individual either holds him or herself out to the public as an appraiser or performs appraisals on a regular basis

[47] Treasury Regulation § 1.170A-13(c)(3)(ii).

2. The appraiser is qualified to make appraisals of the type of property being valued
3. The appraiser is not:
   a. The donor or the taxpayer who claims a deduction for the contribution of the property that is being appraised
   b. A party to the transaction in which the donor acquired the property being appraised unless the property is donated within two months of the date of acquisition and its appraised value does not exceed its acquisition price
   c. The donee of the property
   d. Any person employed by any of the foregoing persons
   e. Any person related to any of the foregoing persons
   f. An appraiser who is regularly used by the donor, donee, or party to the transaction and does not perform a majority of appraisals for other parties
4. The appraiser understands that an intentionally false or fraudulent overstatement of the value of the property described in the qualified appraisal or appraisal summary may subject the appraiser to a civil penalty for aiding and abetting an understatement of tax liability.[48]

CONVERSION OF PROPERTY

Trapped-In Capital Gains Tax

A "trapped-in capital gain" refers to the excess of the fair market value of an appreciated asset over the adjusted basis of that asset. Before 1986, the General Utilities Doctrine[49] permitted a corporation to develop a liquidation plan, sell such appreciated assets, and distribute the proceeds realized from the sale without paying corporate-level taxes on the capital gain.[50]

The adoption of the Tax Reform Act of 1986 eliminated the ability of corporations to avoid paying corporate level taxes on the capital gain. IRC § 336(a) requires that the selling corporation treat the sale of the assets as if they were sold at fair market value and recognize the difference between the fair market value and the adjusted basis of the asset as a capital gain or loss for tax purposes.[51] The corporation's earnings and profits are then taxable to the shareholder upon distribution or liquidation of the corporation.[52]

With the above changes resulting in a corporation having to pay capital gains tax on the sale of appreciated assets, it seems reasonable that a hypothetical seller and buyer would consider the potential tax liability when determining the fair market value of the corporation. However, until 1998, the IRS and Tax Courts rejected this position.

In 1998 the U.S. Tax Court finally acknowledged the perspective of the hypothetical seller and buyer issue regarding the trapped-in capital gain in *Estate of Davis v. Commissioner:*

> We are convinced on the record in this case, and we find, that, even though no liquidation of ADDI&C or sale of its assets was planned or contem-

[48] Treasury Regulation § 1.170A-13(c)(5).
[49] *General Utilities & Operating Co. v. Commissioner,* 296 U.S. 200 (1935).
[50] IRC § 333 (repealed).
[51] IRC § 336(a).
[52] IRC § 316; IRC § 331(a).

> plated on the valuation date, a hypothetical willing seller and a hypothetical willing buyer would not have agreed on that date on a price for each of the blocks of stock in question that took no account of ADDI&C's built-in capital gains tax. We are also persuaded on that record, and we find, that such a willing seller and such a willing buyer of each of the two blocks of ADDI&C stock at issue would have agreed on a price on the valuation date at which each such block would have changed hands that was less than the price that they would have agreed upon if there had been no ADDI&C's built-in capital gains tax as of that date.[53]

While recognizing the existence of a discount for the tax on the trapped-in capital gains, the amount of the discount allowed by the Tax Court was less than the full amount of the tax.

As noted by Shannon Pratt in *Business Valuation Discounts and Premiums*, a second case dealing with the treatment of trapped-in capital gains, *Eisenberg v. Commissioner,*[54] was on appeal in the Second Circuit Court of Appeals when the *Davis* decision was rendered. The Tax Court, relying on precedent prior to the 1986 repeal of the *General Utilities Doctrine*, declined to recognize a discount for the trapped-in capital gains. However, the Second Circuit Court of Appeals cited the *Davis* decision and remanded the case back to the Tax Court.[55]

The magnitude of the trapped-in gains discount was considered by the Tax Court in *Estate of Simplot v. Commissioner.* In *Simplot,* the Tax Court accepted the position of the experts for the petitioner and the IRS that 100 percent of the tax on the trapped-in capital gain on an appreciated asset should be deducted.[56]

Since the decisions by the Tax Court in the aforementioned cases, the IRS has reversed on its position that there was a legal prohibition against a discount for trapped-in capital gains.[57]

Additional discussion of these Tax Court cases is presented in Chapter 13.

Built-In Gains for S Corporations

The issue of trapped-in capital gains is also a consideration for S corporations as set forth in Internal Revenue Code §1374. As it relates to an S corporation, the built-in gain refers to the excess of the fair market value over the adjusted basis of an asset at the beginning of the first year a company makes an S election. It applies to C corporations that elect S status after 1986. Generally, any gain from the sale of assets that the corporation recognizes within the 10 postconversion years is taxed at the highest corporate rate as of the conversion date. The gain flows through to the shareholders, net of the corporate-level tax paid, creating a near double-level tax to the corporation and its shareholders. Any appreciation in assets that occurs after the S conversion period (including goodwill) will not be subject to the built-in gains tax.

For purposes of determining any potential tax exposure from the C to S corporation conversion, a valuation should be performed as of the date of conversion.

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[53] *Estate of Davis v. Commissioner,* 110 T.C. 530 (1998).
[54] *Eisenberg v. Commissioner,* 155 F.3d 50 (2d Cir. 1998).
[55] Shannon P. Pratt, *Business Valuation Discounts and Premiums* (New York: John Wiley & Sons, Inc., 2001), pp. 239–240.
[56] *Estate of Simplot v. Commissioner,* 112 T.C. 130 (1999).
[57] Pratt, *Business Valuation Discounts and Premiums,* p. 241.

ADDENDUM — VALUATION CHECKLISTS/READY REFERENCE (REVENUE RULINGS 59-60, 77-287, AND 93-12)

Introduction

The Revenue Rulings addressed in this chapter provide useful guidance in various valuation situations. Revenue Ruling 59-60 is applicable to many types of valuation engagements. Revenue Ruling 77-287 applies to restricted securities, such as private placements, investment letter stock, control stock, or unregistered securities. Revenue Ruling 93-12 applies to valuing minority interests in closely held companies for intrafamily transfers.

A valuation checklist/ready reference has been created for each of these revenue rulings to assist in a quick review of their key points as well as for the practical application of these rulings to an actual valuation.

Although Revenue Ruling 59-60 and others provide excellent guidance, they are often cumbersome to apply. The checklists are designed to make it easier to apply these rulings.

Keep in mind that many valuation analysts disagree with various components of the revenue rulings. However, a thorough understanding of these revenue rulings is essential to prepare valuations for tax and other purposes.

Revenue Ruling 59-60

Revenue Ruling 59-60 contains a wealth of information. It has also stood the test of time and is often quoted in various valuation situations. However, many analysts feel that it is poorly organized and hard to follow. This checklist presents the ruling in an easy-to-follow format.

The primary information concerning discounts and premiums is highlighted by an asterisk (*).

1. *Purpose*

_____ Estate tax

_____ Gift tax

_____ Income tax (as amplified by Revenue Ruling 65-192)

_____ *Value of closely held corporations

_____ *Value of thinly traded stock

_____ Value of other business entities such as partnerships, proprietorships, etc. (as amplified by Revenue Ruling 65-192)

2. *Background Definitions*

Dates of Valuation

_____ Date of death

_____ Alternate date (6 months after date of death)

Definition of Fair Market Value

_____ "the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts."

_____ "the hypothetical buyer and seller are assumed to be able, as well as willing, to trade and to be well informed about the property and concerning the market for such property."

3. *Approach to Valuation*

_____ Facts and circumstances

_____ No general formula applicable

_____ Wide difference of opinion as to fair market value

_____ Valuation is not an exact science

_____ Sound valuation:

- _____ Relevant facts
- _____ Common sense
- _____ Informed judgment
- _____ Reasonableness

_____ Future outlook:

- _____ Value varies as general economic conditions change
- _____ Optimism versus pessimism
- _____ Uncertainty as to the stability or continuity of future income
- _____ Risk of loss of earnings and value
- _____ Highly speculative value to very uncertain future prospects
- _____ Valuation is a prophecy as to the future

_____ Use of guideline public companies

4. *Factors to Consider*

Nature of the Business and History of the Enterprise from Inception

_____ Past stability or instability

_____ Growth or lack of growth

_____ *Diversity or lack of diversity of its operations

_____ *Degree of risk in the business

_____ Study of gross and net income

_____ *Dividends history

_____ Nature of the business

_____ Products or services

_____ Operating and investment assets

_____ *Capital structure

_____ Plant facilities

_____ Sales records

_____ *Management

_____ Due regard for recent significant changes

_____ Discount events of the past that are unlikely to recur in the future

_____ Value has a close relation to future expectancy

_____ Recent events are of greatest help in predicting the future

Economic Outlook in General and Condition and Outlook of the Specific Industry in Particular

_____ Current and prospective economic conditions

_____ National economy

_____ Industry or industries

_____ More or less successful than its competitors; stable with competitors

_____ Ability of industry to compete with other industries

_____ Prospective competition

_____ Price trends in the markets for commodities and securities

_____ *Possible effects of a key person or thin management/lack of succession

_____ Effect of the loss of the manager on the future expectancy of the business

_____ *Key person life insurance could be partially offsetting

Book Value of the Stock and the Financial Condition of the Business

_____ Two historical fiscal year-end balance sheets

_____ Balance sheet as of the end of the month preceding the valuation date

_____ *Liquid position (ratio of current assets to current liabilities)

_____ Gross and net book value of principal classes of fixed assets

_____ Working capital

_____ Long-term indebtedness

_____ *Capital structure

_____ Net worth

_____ *Revalued nonoperating assets (i.e, investments in securities and real estate) on the basis of their market price

_____ Generally, nonoperating assets command lower rates of return

_____ Acquisitions of production facilities or subsidiaries

_____ Improvements in financial position

_____ *Recapitalizations

_____ *Changes in capital structure

_____ *Classes of stock

_____ *Examine charter or certificate of incorporation for rights and privileges of the various stock issues including:

  _____ Voting powers

  _____ Preference as to dividends

  _____ Preference as to assets in the event of liquidation

The Earning Capacity of the Company

_____ Preferably five or more years of detailed profit and loss statements

_____ Gross income by principal items

_____ Deductions from gross income:

  _____ Operating expenses

  _____ Interest and other expense on each item of long-term debt

  _____ Depreciation and depletion

  _____ *Officers' salaries in total if reasonable and in detail if they appear excessive

  _____ Contributions based on nature of business and its community position

  _____ Taxes

_____ *Net income available for dividends

_____ *Rates and amounts of dividends paid on each class of stock

_____ Remaining amount carried to surplus

_____ Adjustments to, and reconciliation with, surplus as stated on the balance sheet

_____ Separate recurrent from nonrecurrent items of income and expense

_____ *Distinguish between operating income and investment income

_____ Ascertain whether or not any line of business is operating consistently at a loss and might be abandoned with benefit to the company

_____ *Note percentage of earnings retained for business expansion when considering dividend-paying capacity

_____ Secure all information concerning past income that will be helpful in predicting the future (potential future income is a major factor in many valuations)

_____ Prior earnings records are usually the most reliable guide as to future earnings expectancy

_____ The use of arbitrary five- or ten-year averages without regard to current trends or future prospects will not produce a realistic valuation

_____ If a record of progressively increasing or decreasing net income is found, consider according greater weight to the most recent years' profits in estimating earning power

_____ Look at margins and percentages of sales to assess risk:

- _____ Consumption of raw materials and supplies for manufacturers, processors, and fabricators
- _____ Cost of purchased merchandise for merchants
- _____ Utility services
- _____ Insurance
- _____ Taxes
- _____ Depreciation and depletion
- _____ Interest

Dividend-Paying Capacity

_____ *Primary consideration to dividend-paying capacity rather than dividends actually paid

_____ *Recognition of the necessity of retaining a reasonable portion of profits to meet competition

_____ *When valuing a controlling interest, the dividend factor is not a material element, since the payment of such dividends is discretionary with the controlling stockholders

_____ *The individual or group in control can substitute salaries and bonuses for dividends, thus reducing net income and understating the dividend-paying capacity of the company

_____ *Dividends are a less reliable factor for valuation than dividend paying capacity

Whether the Enterprise Has Goodwill or Other Intangible Value

_____ Goodwill is based on earning capacity

_____ Goodwill value is based on the excess of net earnings over and above a fair return on the net tangible assets

_____ Factors to consider to support intangible value:

  _____ Prestige and renown of the business

  _____ Trade or brand name

  _____ Record of success over a prolonged period in a particular locality

_____ Sometimes it may not be possible to make a separate valuation of tangible and intangible assets

_____ Intangible value can be measured by the amount that the value of the tangible assets exceeds the net book value of such assets

Sales of the Stock and the Size of the Block of Stock to Be Valued

_____ Prior sales should be arm's length

_____ Forced or distressed sales do not reflect fair market value

_____ Isolated sales in small amounts may not control as a measure of value

_____ *Blockage is not an issue since the stock is not publicly traded

_____ *Size of the block of stock is a relevant factor

_____ *A minority interest in an unlisted corporation's stock is more difficult to sell than a similar block of listed stock

_____ *Control of a corporation, either actual or in effect, may justify a higher value for a specific block of stock since it is an added element of value

Market Price of Stocks of Corporations Engaged in the Same or a Similar Line of Business Having Their Stocks Actively Traded in a Free and Open Market, Either on an Exchange or Over-the-Counter

_____ *Must be evidence of an active free public market for the stock as of the valuation date to be used as a comparable company

_____ Use only comparable companies

_____ The lines of business should be the same or similar

_____ A comparable with one or more issues of preferred stock, bonds, or debentures in addition to its common stock should not be considered to be directly comparable to one having only common stock outstanding

_____ A comparable with a declining business and decreasing markets is not comparable to one with a record of current progress and market expansion

5. Weight to Be Accorded Various Factors

_____ Certain factors carry more weight than others because of the nature of the company's business

_____ Earnings may be the most important criterion of value in some cases, whereas asset value will receive primary consideration in others

_____ Give primary consideration to earnings when valuing stocks of companies that sell products or services to the public

_____ Give greatest weight to the assets underlying the security to be valued for investment or holding-type companies

_____ Closely held investment or real estate holding company:

- _____ Value is closely related to the value of the assets underlying the stock
- _____ The appraiser should determine the fair market values of the assets of the company
- _____ *Operating expenses of such a company and the cost of liquidating it, if any, merit consideration
- _____ The market values of the assets give due weight to potential earnings and dividends of the particular items of property underlying the stock, capitalized at rates deemed proper by the investing public at the valuation date
- _____ Adjusted net worth should be accorded greater weight in valuing the stock of a closely held investment or real estate holding company, whether or not it is family owned, than any of the other customary yardsticks of appraisal, such as earnings and dividend-paying capacity

6. Capitalization Rates

_____ Capitalize the average or current results at some appropriate rate

_____ One of the most difficult problems in valuation

_____ No ready or simple solution will become apparent by a cursory check of the rates of return and dividend yields in terms of the selling price of corporate shares listed on the major exchanges

_____ Wide variations will be found even for companies in the same industry

_____ The ratio will fluctuate from year to year depending upon economic conditions

_____ No standard tables of capitalization rates applicable to closely held corporations can be formulated

_____ Important factors to consider:

_____ Nature of the business

_____ Risk

_____ Stability or irregularity of earnings

7. *Average of Factors*

_____ Valuations cannot be made on the basis of a prescribed formula

_____ There is no means whereby the various applicable factors in a particular case can be assigned mathematical weights to derive the fair market value

_____ No useful purpose is served by taking an average of several factors (e.g., book value, capitalized earnings, and capitalized dividends) and basing the valuation on the result

_____ Such a process excludes active consideration of other pertinent factors, and the end result cannot be supported by a realistic application of the significant facts in the case except by mere chance

8. *Restrictive Agreements*

_____ *Where shares of stock were acquired by a decedent subject to an option reserved by the issuing corporation to repurchase at a certain price, the option price usually is accepted as the fair market value for estate tax purposes

_____ *The option price is not determinative of fair market value for gift tax purposes

_____ *Where the option or buy and sell agreement is the result of voluntary action by the stockholders and is binding during the life as well as at the death of the stockholders, such agreement may or may not, depending on the circumstances of each case, fix the value for estate tax purposes

_____ *Such restrictive agreements are a factor to be considered, with other relevant factors, in determining fair market value

_____ *Where the stockholder is free to dispose of his shares during life and the option is to become effective only upon his or her death, the fair market value is not limited to the option price

_____ *Determine whether the agreement represents a bona fide business arrangement or is a device to pass the decedent's shares for less than an adequate and full consideration in money or money's worth:

_____ Relationship of the parties

_____ Relative number of shares held by the decedent

_____ Other material facts

Revenue Ruling 77-287

Revenue Ruling 77-287 deals with the valuation of "restricted securities." These types of securities are also referred to as unregistered securities, investment letter stock, control stock, and private placement stock. A thorough understanding of this revenue ruling will also assist in determining Discounts for Lack of Marketability (DLOM) in closely held companies.

1. *Purpose*

_____ Amplifies Revenue Ruling 59-60

_____ Valuation of securities that cannot be resold because they are restricted from resale pursuant to federal securities laws

2. *Nature of the Problem*

_____ Valuation of stock that has not been registered for public trading when the issuing company has stock of the same class that is actively traded in the securities markets

_____ Determine the difference between the fair market value of the registered actively traded shares versus the unregistered shares of the same company

_____ For estate and gift tax as well as when unregistered shares are issued in exchange for assets or the stock of an acquired company

3. *Background and Definitions*

_____ Restricted securities cannot lawfully be distributed to the general public until a registration statement relating to the corporation underlying the securities has been filed and has become effective under the rules of the SEC and federal securities laws.

_____ *Restricted securities:* Defined in Rule 144 as "securities acquired directly or indirectly from the issuer thereof, or from an affiliate of such issuer, in a transaction or chain of transactions not involving any public offering."

_____ *Unregistered securities:* Securities where a registration statement, providing full disclosure by the issuing corporation, has not been filed with the SEC pursuant to the Securities Act of 1933. The registration statement provides the prospective investor with a factual basis on which to make an investment decision.

_____ *Investment letter stock:* Also called letter stock. Shares of stock issued without SEC registration. The stock is subject to resale and transfer restrictions set forth in a letter agreement requested by the issuer and signed by the buyer. Such stock may be found in the hands of individual or institutional investors.

_____ *Control stock:* The stock is held by an officer, director, or other person close to corporate management. These people are subject to certain requirements pursuant to SEC rules upon resale of shares they own in such corporations.

_____ *Private placement stock:* The stock has been placed with an institution or other investor who will presumably hold it for a long period and ultimately arrange to have the stock registered if it is to be offered to the general public. This stock may or may not be subject to a letter agreement. Private placements are exempted from the registration and prospectus provisions of the Securities Act of 1933.

_____ *Exempted securities:* Expressly excluded from the registration provisions of the Securities Act of 1933 and the distribution provisions of the Securities Exchange Act of 1934.

_____ *Exempted transactions:* Certain sales or distributions that do not involve a public offering and are excluded from the registration and prospectus provisions of the 1933 and 1934 Acts. Issuers do not have to go through the registration process.

4. *Securities Industry Practice in Valuing Restricted Securities*

_____ Investment company valuation practices:

- _____ Open-end investment companies must publish the valuation of their portfolios on a regular basis
- _____ Many own restricted and unrestricted securities of the same companies
- _____ Valuation methods:
  - _____ Market price of unrestricted publicly traded stock less a constant percentage discount based on purchase discount
  - _____ Market price of unrestricted publicly traded stock less a constant percentage discount different from purchase discount
  - _____ Market price of unrestricted publicly traded stock less a discount amortized over a fixed period
  - _____ Market price of the unrestricted publicly traded stock
  - _____ Cost of the restricted stock until it is registered
- _____ The SEC stated that there are no automatic formulas
- _____ The SEC has determined that it is the responsibility of the board of directors of the particular investment company to determine the "fair value" of each issue of restricted securities in good faith

_____ *Institutional Investors Study:*

- _____ The SEC undertook an analysis of the purchases, sales, and holding of securities by financial institutions
- _____ Published in March 1971
- _____ Includes an analysis of restricted securities
- _____ Period of study is January 1, 1966, through June 30, 1969

_____ Characteristics of the restricted securities purchasers and issuers

_____ The size of transactions in both dollars and shares

_____ Marketability discounts on different trading markets

_____ Resale provisions

_____ The amount of discount allowed for restricted securities from the freely traded public price of the unrestricted securities was generally related to the following factors:

Earnings

_____ Earnings and sales have significant influence on the size of the discounts

_____ Earnings patterns rather than sales patterns determine the degree of risk of an investment

Sales

_____ The dollar amount of sales of the issuers' securities also has a major influence on the amount of discounts

_____ Generally, companies with the lowest dollar amount of sales during the period accounted for most of the transactions involving the highest discounts while they accounted for the lowest number that involved the lowest discounts

Trading Market

_____ Higher discounts for over-the-counter, followed by the American Stock Exchange, then the New York Stock Exchange

Resale Agreement Provisions

_____ The discount from market price provides the main incentive for a potential buyer to acquire restricted securities

_____ Two factors are important in judging the opportunity cost of freezing funds in a restricted security:

  _____ The risk that the underlying value of the stock will change in a way that, absent the restrictive provisions, would have prompted a sale

  _____ The risk that the contemplated means of legally disposing the stock may not materialize

_____ Seller may be relieved of the expenses of registration and public distribution as well as the risk that the market will adversely change before the offering is completed

_____ Buyer and seller bargaining strengths influence the discount

_____ Most common provisions are:

_____ Option for "piggyback" rights to register restricted stock with the next registration statement, if any, filed by the issuer with the SEC

_____ Option to require registration at the seller's expense

_____ Option to require registration, but only at the buyer's own expense

_____ Right to receive continuous disclosure of information about the issuer from the seller

_____ Right to select one or more directors of the issuer

_____ Option to purchase additional shares of the issuer's stock

_____ Provision given the buyer the right to have a greater voice in operations of the issuer, if the issuer does not meet previously agreed-upon operating standards

_____ Institutional buyers often obtain these rights from sellers of restricted stocks

_____ The more rights a buyer can acquire, the lower the buyer's risk, thus the lower the buyer's discount

_____ Small buyers may not be able to negotiate the large discounts or the rights and options that the volume buyers are able to negotiate

Summary

_____ A variety of methods have been used by the securities industry to value restricted securities

_____ The SEC rejects all automatic or mechanical solutions to the valuation of restricted securities

_____ The SEC prefers to rely upon good- faith valuations by the board of directors of each company

_____ An SEC study found that restricted securities generally are issued at a discount from the market value of freely traded securities

5. Facts and Circumstances Material to the Valuation of Restricted Securities

_____ Often a company's stock cannot be traded because of securities statutes as in the case of investment letter restrictions

_____ Stock may also may be restricted from trading because of a corporate charter restriction or a trust agreement restriction

_____ The following documents and facts, when used in conjunction with those discussed in section IV of Revenue Ruling 59-60, are useful in the valuation of restricted securities:

_____ Any declaration of trust agreement or any other agreements relating to the shares of restricted stock

_____ Any documents showing any offers to buy or sell or indications of interest in buying or selling the restricted shares

_____ Latest company prospectus

_____ Three to five years of annual reports

_____ Trading prices and trading volume and the related class of traded securities one month preceding the valuation date

_____ The relationship of the parties to the agreements concerning the restricted stocks, such as whether they are members of the immediate family or whether they are officers or directors of the company

_____ Whether the interest being valued represents a majority or minority ownership

6. *Weighing Facts and Circumstances Material to Restricted Stock Valuation*

_____ Depending on the circumstances of each case, certain factors may carry more weight than others

_____ Earnings, net assets, and net sales must be given primary consideration

_____ In some cases one element may be more important than others

_____ For manufacturing, producing, or distributing companies, primary weight must be accorded earnings and net sales

_____ For investment or holding companies, primary weight must be given to the net assets

_____ Careful review of resale provisions found in restricted agreements

_____ The two elements of time and expense should be reflected in a discount

_____ The longer the buyer of the shares must wait to liquidate the shares, the greater the discount

_____ If certain provisions make it necessary for the buyer to bear the expense of registration, the discount is greater

_____ If the provisions of the restricted stock agreement make it possible for the buyer to "piggyback" shares of the next offering, the discount would be smaller

_____ The relative negotiating strengths of the buyer and seller of restricted stock

_____ A tight money situation may cause a buyer to have more negotiating strength

_____ In some cases the relative strengths may tend to cancel each other

_____ The market experience of freely tradable securities of the same class as restricted securities is also significant

_____ Whether the shares are privately held or publicly traded

_____ Securities traded on a public market generally are worth more to investors than those not traded on a public market

_____ The type of public market in which the unrestricted securities are traded can be given consideration

Revenue Ruling 93-12

The IRS revoked Revenue Ruling 81-253, which applied family attribution to determine control when valuing minority interests in closely held companies. After Revenue Ruling 81-253 was issued, the IRS lost a majority of the court cases concerning family attribution.

Revenue Ruling 93-12 states that a minority discount on stock transferred to a family member will not be challenged solely because the transferred interest, when aggregated with interests held by other family members, will be a part of a controlling interest. This ruling arose from a gift tax case.

Issue

_____ If a donor transfers shares in a corporation to each of the donor's children, is the factor of corporate control in the family to be considered in valuing each transferred interest?

Facts

_____ Taxpayer owned all the shares of stock of a corporation

_____ Taxpayer made simultaneous gifts of 20 percent blocks of stock to each of five children

Law and Analysis

_____ The value of the property at the date of the gift shall be considered the amount of the gift

_____ The value of the property is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell, and both having reasonable knowledge of relevant facts

_____ Fair market value on the date of the gift

_____ Among the factors to be considered is the degree of control of the business being represented by the block of stock to be valued

_____ Revenue Ruling 81-253, 1981-1 C.B. 187 holds that, ordinarily, no minority shareholder discount is allowed with respect to transfers of shares of stock between family members if, based on a composite of the family members' interests at the time of the transfer, control (either majority voting control or de facto control through family relationships) of the corporation exists in the family unit

_____ Revenue Ruling 81-253 states that the Internal Revenue Service will not follow the decision in the 1981 case *Est. of Bright v. United States*

_____ In *Bright* the court allowed a 27.5 percent interest to be valued as a minority interest, even though the shares were to be held by the decedent's surviving spouse

_____ *Propstra v. United States (1982), Est. of Andrews v. Comm (1982)* and *Est. of Lee v. Comm (1978)*. These cases held that the corporations' shares owned by other family members cannot be attributed to an individual family member for determining whether the individual family member's share should be valued as a controlling interest of the corporation

_____ The IRS has concluded, in the case of a corporation with a single class of stock, notwithstanding the family relationship of the donor, the donee, and other shareholders, the shares of other family members will not be aggregated with the transferred shares to determine whether the transferred shares should be valued as part of a controlling interest

_____ The five 20 percent interests that were gifted should be valued without regard to the family relationship of the parties

Holding

_____ If a donor transfers shares in a corporation to each of the donor's children, the factor of corporate control in the family is not considered in valuing each transferred interest

_____ The IRS will follow *Bright, Propstra, Andrews,* and *Lee* in not assuming that all voting power held by family members may be aggregated as part of a controlling interest

_____ A minority discount will not be disallowed solely because a transferred interest, when aggregated with interests held by family members, will be part of a controlling interest

_____ This will be the case whether the donor held 100 percent or some lesser percentage of the stock immediately before the gift

Effect on Other Documents

_____ Revenue Ruling 81-253 is revoked

CHAPTER 12

Valuation of Family Limited Partnerships

The family limited partnership (FLP) is a sophisticated financial planning technique that, when implemented properly, enables a family to hold and manage its wealth, including the family business, within several generations of family members as partners. Families with significant wealth increasingly establish an FLP rather than a corporation because the FLP often is better suited to achieving certain objectives.

Some background on corporations and partnerships is helpful to understanding the FLP. The profits of a C corporation are taxed at a maximum rate of 35 percent (for federal tax purposes); when the after-tax profits of the C corporation are distributed to the shareholders as dividends, those same profits are taxed a second time to the individual shareholders, up to the maximum federal statutory rate of 38.6 percent. The combined corporate and personal tax rate can easily exceed 60 percent, even before state and local income taxes are taken into account.

Alternatively, the profits of a subchapter S corporation are, in general, taxed at the shareholder level only—making the S corporation a more appealing structure than the C corporation in many instances. However, there are numerous restrictions on the qualifications for functioning as an S corporation, even after the liberalizing amendments enacted in 1996.

By comparison, a partnership is a pure "flow-through" entity, meaning that the income realized by the entity flows through and in all cases is taxable to its individual owners and not to the business per se. As a result, the limited partnership has become increasingly popular as a flexible and tax-efficient vehicle for conducting business—particularly as compared to a corporation, which is more a formal and generally can be a tax-inefficient means for conducting business.

Further enhancing the desirability of partnerships is the Uniform Limited Partnership Act adopted by a large majority of the states. This statute standardizes and simplifies the laws governing a limited partnership's conduct of business in more than one state.

FAMILY LIMITED PARTNERSHIP USES

In addition, FLPs may be used by families as the means:

- To provide a resolution of any disputes that may arise among the family, preserve harmony, and avoid the expense and problems of litigation
- To maintain control of the family assets

- To promote the efficient and economic management of the assets and properties under one entity
- To consolidate fractional interests in family assets
- To increase family wealth
- Whereby annual gifts can be made without fractionalizing the underlying family assets
- To restrict the right of nonfamily members to acquire interests in the family assets
- To provide protection of the family assets from claims of future creditors
- Of preventing the transfer of a family member's interests as a result of a failed marriage
- To provide flexibility in business planning not available through trusts, corporations, or other business entities
- To facilitate the administration and reduce the cost associated with the disability or probate of the estate of family members
- To promote the family's knowledge of and communication about the family assets

These goals can be achieved as a result of the FLP's ability to:

- Engage in the real estate business, i.e., to acquire, own, hold, develop, and operate real estate enterprises
- Invest funds and to raise funds to be invested in furtherance of the underlying purposes
- Invest, manage, and operate various investments including but not limited to marketable securities, stocks, bonds, gold, silver, grain, cotton, other commodities, and debt instruments

TAX ADVANTAGES

This type of entity structure also provides a vehicle to maximize the profits and yield to the family members due to three factors:

1. A partnership structure eliminates the possibility of double taxation (i.e., taxation at the entity and the individual level). This will provide higher returns to the family members, by reducing their tax burden. Unlike outright gifts, this structure minimizes the possibility that any new partners could impair the value of the assets.
2. Internal Revenue Code Section 754 permits a partnership to file an election upon the death of a partner to adjust the basis under IRC Section 743(b). Again this provides additional value to the family members.
3. Internal Revenue Code Section 2036(b) provides that the retention of the right to vote (directly or indirectly) shares of stock of a controlled corporation is a retention of the enjoyment of transferred property. Accordingly, the value of such stock is still includable in the estate of the transferor. However, IRC Section 2036(b) does not apply to partnership interests.

HOW FAMILY LIMITED PARTNERSHIPS ARE FORMED

The family limited partnership usually is formed by the senior generation by transferring assets in return for general and limited partnership interests. These interests carry certain rights as to distributions, cash flows, and/or access to assets based on the state law provisions specific to the state of governance.

Assets are generally investment real estate, marketable securities, bonds, or other assets that are expected to appreciate. General partner interests usually range from 1 to 5 percent. Alternatively, limited partner interests usually range from 95 to 99 percent. Further, general partner interests usually are held by the senior generation or by a separate entity, whereby the senior generation retains control of the entity and the underlying assets.

Subsequently, gifts generally are made to the junior generation of limited partnership interests as a highly efficient means of transferring value and assets out of the estate of the senior generation while maximizing the use of the federal and state estate and gift tax structure. Such efficiency and tax structure benefits are made possible because federal and state laws and regulations treat an ownership interest in a limited partnership substantially differently from a direct ownership interest in particular assets.

For example, assume that a husband and his spouse own various marketable securities worth $1 million. They both transfer these assets to an FLP. Later, they transfer a 10 percent interest to their child. This transfer typically will be taxed for gift tax purposes based on the value transferred. If a 10 percent interest in the underlying assets were directly transferred, the taxable value would be $100,000 ($1,000,000 × 10 percent). However, through the use of the FLP, the taxpayers (husband and spouse) can leverage the amount of the gift. The taxable value, due to the nature of the interest transferred, would not be a pro rata interest in the underlying assets. Rather, it would be the amount that a "hypothetical buyer" would pay for a 10 percent interest in a limited partnership. This interest would consider the fact that a limited partner's interest (or an assignee's interest) cannot and does not have access to partnership assets and cannot force any distribution or effectively control the ability to receive a return on his or her investment.

As a result, the transferred interest above would be discounted for these ownership and marketability issues and might be valued as follows:

Value of underlying assets		$1,000,000
Interest transferred		× 10%
Prorata value of interest		100,000
Discount for lack of control	25%*	− 25,000
		75,000
Discount for lack of marketability	30%*	− 22,500
Value of interest transferred		$ 52,500

*Note: For illustrative purposes only

By utilizing this type of transfer structure, the taxpayers have effectively reduced their exposure to estate and/or gift taxes by $26,125 ($100,000 pro rata value – $52,500 discounted value = $47,500 × 55 percent marginal estate/gift tax rate = $26,125) or 26.0 percent.

This type of "wealth preservation planning" technique can accomplish multiple goals with respect to an individual's assets, wealth, and estate. However, these benefits do not come without their share of issues.

OTHER CHARACTERISTICS OF FAMILY LIMITED PARTNERSHIPS

- Family Limited Partnerships require at least two different partners: one general partner and one limited partner.
- The general partner(s) has (have) full control over the management, decisions, and day-to-day operations of the partnership affairs.
- The general partner(s) is (are) responsible for all financial and legal obligations of the partnership.
- The limited partner(s) is (are) viewed as silent family members with no voice in the partnership operations or management.
- The limited partner(s) is (are) not responsible for any unguaranteed financial and legal obligations in excess of the investment.

STATE LAW, PROPERTY RIGHTS, AND THEIR IMPORTANCE TO THE VALUATION PROCESS

To fully assess the magnitude and volatility of an investment's risks and returns, the valuation analyst needs to begin with a precise definition of the specific investment or ownership interest to be valued. The analyst's function will then be to quantify the value of the "bundle of rights" associated with the investment or specific ownership interest. The characteristics of this bundle of rights heavily impact the value of the investment and provide some indication of the risk and return associated with it. In addition, the more rights associated with the investment or ownership interest, the more valuable it is. Consequently, the analyst also must precisely define the bundle of rights associated with the subject interest, or the resulting value (although mathematically correct) may be of the wrong investment.

Rights are granted to a specific ownership interest by the underlying state laws that govern the investment to be valued. For this reason, attorneys are best qualified to opine on the characteristics of the bundle of rights associated with the subject investment. To assure accuracy of the legal assumptions on which the value opinion will be based, the analyst may want to include legal counsel in early discussions of the property being valued and the state laws and property rights associated with it.

For instance, the value on a per share basis of a 32.5 percent interest in a closely held California corporation and a 33.5 percent interest in the same California corporation are not necessarily the same. As discussed in *Estate of Luton vs. Commissioner, T.C. Memo. 1994-539*, an interest in a California corporation of one-third or greater has the ability to force liquidation under certain circumstances.

Accordingly, the liquidation rights associated with the 33.5 percent interest increase its value since an investor may be willing to pay more on a per-share basis for such rights.

By way of another example, an assignee interest typically will have the lowest level of rights of any interest, which may include factors such as the following:

- A right to receive, to the extent assigned, nonliquidating distributions and liquidating distributions to which the assignor/partner would be entitled as well as a right to receive, to the extent assigned, allocations of income, gain, loss, deduction, credit, or similar item to which assignor/partner would be entitled.
- No right to require any information or account of the FLP transactions.
- No right to inspect the FLP books.
- No right to vote on any matters that a general or limited partner would be entitled to vote.
- No right to call partnership meetings.
- No voice in the management of the FLP.
- No ability to maintain an action (lawsuit) against a general partner for breach of fiduciary duty.
- No right to withdraw from the FLP *and* receive fair value for its assignee interest prior to the expiration of the term of the partnership.

FLP property rights consist of either or both: (1) an ownership interest in the partnership and (2) management rights. Both general and limited partners, as well as their assignees, have no interest in the underlying assets owned by the FLP because these assets are no longer owned directly by the contributing partners. They are now owned by the FLP. The contributing partners received interests in the partnership in exchange for their contribution of assets and surrendered their ownership interest in the underlying partnership assets.

Therefore, an interest in the partnership is considered intangible personal property and consists of the partner's share of FLP distributions and the allocation of income, gain, loss, deduction, credit, or similar items, irrespective of the actual physical character of the underlying partnership assets.

ValTip

Once a valuation analyst has a solid understanding of the bundle of rights, he or she is better prepared to determine how to capture their addition to or detriment from value in the subject's benefit stream, rate of return, discount applied to enterprise value, or a combination of these. Doing this will involve gaining a picture not only of the rights that exist but, more important, of those rights that do not exist.

IMPROPER FORMATION CAN CREATE PROBLEMS FOR PARTNERS

A variety of considerations regarding FLP formation have become the focus of recent Internal Revenue Service (IRS) attacks and litigation. These considerations include but are not limited to:

- Gifts on formation
- Indirect gifts
- Subsequent asset infusions
- Asset diversification
- Real property assessments

"Gift on Formation," Indirect Gifts, and Subsequent Asset Infusions

Gifts of assets on the formation of an FLP typically are transferred to the newly formed entity in return for partnership interests (limited and general). As such, it is important that these initial contributions be transferred on the date the FLP is formed and that they have been appropriately valued to provide the desired basis from which to determine the percentage of ownership to attribute to each contributing partner. The percent ownership interest received by each partner in exchange for contributed assets should be based on the relative value of those assets and should be reflected in the individual partner's capital account. Last, the partnership should be a "straight-up" pro rata partnership with respect to all allocations. Allocations of all items should be based on the partnership interest percent.

If assets are not transferred upon formation in return for the same percentage of partnership interest in relation to the assets, there can be an unintended gift of the value differential between the assets transferred and the interest received.

"Indirect" gifts typically are created through non–pro rata allocations of income or capital appreciation and/or the attribution of improper asset values to a particular partner's capital account at formation. When additional assets are transferred to the FLP after formation and the value of the subsequent assets is not attributed to the donor's capital account, an indirect gift to the nondonating partners can also occur.

Asset Diversification

When publicly traded securities are contributed to an FLP, it is important to avoid triggering the gain recognition rules under the "Investment Company" provisions of Internal Revenue Code (IRC) § 351.

IRC § 721(a) provides that, as a general rule, no gain or loss is recognized by any partner transferring property to a partnership in exchange for an interest in the partnership. However, IRC § 721(b) provides that the transfer of appreciated property to a partnership that would be treated as an investment company within the meaning of IRC § 351 (if it were incorporated) would not be a tax-free transfer under IRC § 721(a). The section further states that such a transfer would be considered taxable if:

- The transfer results, directly or indirectly, in the diversification of the transferor's interests

- The transfer is to an entity holding more than 80.0 percent of the value of its assets, excluding cash and nonconvertible debt instruments, for investment in readily marketable stocks, securities, or interests in regulated investment companies or real estate investment trusts

Real Property Reassessment

Property tax laws in the governing state are of crucial importance when valuing an FLP. Certain transfers of real property into an FLP can give rise to a reassessment of the real property for real estate tax purposes. In certain states, real property tax reassessment may not be triggered by the initial transfer of real property to the FLP but may be triggered by the subsequent transfer of the FLP interests. In many jurisdictions, the exclusions for reassessment that apply to the direct transfer of real property may not apply in the context of the transfer of FLP interests. As a result, in certain situations (usually upon the transfer of 50.0 percent or more of the FLP interests on a cumulative basis) this may result in a reassessment. In addition, some states have a transfer tax on real property exchanges.

VALUATION OF FAMILY LIMITED PARTNERSHIP INTERESTS

The valuation of an FLP interest involves a number of considerations and steps:

Preliminary Considerations

- Information required
- Analyzing the agreement
- IRC Chapter 14 considerations

The Valuation Process

- Understanding the assets, operations, and financial components of the partnership
- Data sources, comparative/benchmark information
- Valuation approaches
- Application of the data and multiples or adjustments

Each of these considerations is discussed in depth below.

Preliminary Considerations

Information Required

As with all valuation engagements, the information required to prepare the valuation of an FLP is dependent on the facts in the case. However, where available, certain information should be considered the minimum foundation to complete the assignment. This information includes:

- Final partnership agreement and all amendments and assignments associated with it

- Documentation of assets being contributed
- Appraisals of real estate and other partnership assets
- Other valuations as needed (in tiered entity structures)
- Balance sheet as of valuation date
- Income statement as of the valuation date
- Tax returns or prior filings
- Certificate of limited partnership
- Income and distribution history
- Prior valuations of the partnership
- Details of prior transfers (gift or otherwise) into the partnership
- Management structure and analysis of decision making rights
- Governing state partnership laws

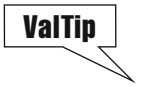
Analyzing the Agreement

One of the key considerations to valuing an FLP interest is a thorough understanding of the provisions of the partnership agreement to accurately reflect them in the value estimate. Given the fact that the agreement is a legal document and most analysts are not attorneys, the analyst will want to seek the guidance of legal counsel for this task.

The provisions of the agreement, as well as governing state partnership law, will define the interest and rights associated with the particular FLP. A typical agreement will have provisions regarding capital contributions, distributions, allocations, liquidation, voting, term, withdrawal, death, transfer, and termination. Furthermore, the agreement will provide for certain rights and restrictions specific to the general partner(s) and to the limited partners.

Examples of 15 common provisions in family limited partnership agreements are provided below, using typical terminology and language structure.

1. *Term.* "The Partnership will commence upon the filing of a certificate of limited partnership in the office of the Secretary of State of Anystate and shall continue for forty years from December 1, 2002, unless sooner dissolved pursuant to the provisions of this Agreement or unless continued by unanimous consent of the Partners."



Term restriction is important from a valuation perspective because it defines the inability of the limited partners to receive a return on their investment prior to the completion of the partnership term.

2. *Business Purposes.* "The business purpose of the Partnership shall be to acquire, own, operate, and dispose of investment real estate property. Additional related business activities permitted by law may be engaged in by the Partnership from time to time as determined by the General Partners."

3. *Majority Vote.* "Majority vote shall mean the affirmative vote by the Limited Partners of record which vote represents more than 50 percent of the aggregate Interests of the Limited Partners of record entitled to vote."

This type of provision provides rights for limited partners in certain circumstances that may enable them to affect some operations of the partnership. As such, the impact of this type of provision is partially dependent on the size of the limited partnership interest being valued.

4. *Transfer of Partnership Interests.*

   a. "The term 'transfer,' when used in this article with respect to a Partnership interest, shall include any sale, assignment, gift, pledge, hypothecation, mortgage, exchange, or other disposition of such Partnership interest."
   b. "No Partnership interest shall be transferred, in whole or in part, except in accordance with the terms and conditions set forth in this article. Notwithstanding the preceding sentence, if all of the Partners enter into an Agreement for the purchase of a Partner's Partnership interest, such Agreement shall be binding upon the Partners and the Partnership."

If the provisions in the agreement are anything other than fair market value between family members, it may be disregarded under § 2703.

Most partnership agreements have a clearly stated restriction on transferability of partnership interests, primarily to protect all partners from finding themselves legally bound to partnership with individuals not of their choice. From a valuation perspective, such restrictions on transferability may have a material impact on the selection of the degree of discount for lack of control and lack of marketability. However, if other provisions modify the transferability restrictions, they may provide a mitigating effect on the depth of the discount for lack of control and lack of marketability.

5. *Capital Contribution of General Partners.* "The General Partners shall be credited with the Gross Asset Value of the property contributed by them. As of the date of such contributions, the Capital Account balance of the General Partners shall equal XX percent of the aggregate Capital Account balances of all Partners."

All contributions are to be credited to the partners' accounts to avoid the "gift on formation" issues previously discussed.

6. *General Authority and Obligations of the General Partners.* "The General Partners shall actively manage and conduct the business of the Partnership devoting such time to the management as the General Partners may deem necessary. The General Partners shall have the full and complete power to do any and all things necessary or incident to the management and conduct of the Partnership business. The General Partners shall have full power and authority to take any action they deem necessary or advisable on behalf of the Partnership and shall make all decisions affecting the business, affairs and properties of the Partnership. No person dealing with the Partnership shall be required to inquire into the authority of the General Partners to take any action or execute any document on behalf of the Partnership. Specific powers include:

   a. *Conveyances.* "The General Partners shall have the authority to sell, exchange, assign, or transfer any of the property or assets of the Partnership, in furtherance of the business of the Partnership, and, in connection therewith, to execute, in the Partnership name, by agent or nominee, any and all assignments, documents, bills of sale, and other papers pertaining to the Partnership business.
   b. *Authorized Acts of the General Partners.* "Without limiting the generality of the provisions of this Agreement concerning general authority and obligations of the General Partners and conveyances and in furtherance of the purposes of the Partnership, but subject to any specific limitations provided in the Act or in this Agreement, the General Partners are hereby authorized to do any and all of the following:

      i. Resolve claims of or demands against the Partnership;
      ii. Pay as a Partnership expense all costs associated with the operation of the Partnership;
      iii. Apply the Partnership's funds in a manner consistent with this Agreement;
      iv. Make tax elections;
      v. Require in Partnership contracts that no Limited Partner have any personal liability thereon;

vi. Execute all documents or instruments of any kind which the General Partners deem appropriate for carrying out the purposes of the Partnership, except as otherwise provided herein;
vii. Acquire, hold, develop, improve, maintain, operate, lease, sell, exchange, and dispose of any real property and personal property that may be necessary to the accomplishment of the Partnership's purposes;
viii. Borrow money from banks or other lending institutions on behalf of the Partnership; and in connection therewith, mortgage, pledge, or create other security interests on any or all of the Partnership assets and income therefrom and secure or provide for the repayment of such borrowing or loans;
ix. Deposit Partnership funds in bank certificates of deposit, interest-bearing savings and checking accounts, prime commercial paper, or government obligations;
x. Purchase insurance, or extend the General Partners' insurance, at the Partnership's expense, to protect Partnership properties and the business of the Partnership against loss and to protect the General Partners against liability to third parties arising out of Partnership activities; and
xi. Enter into any kind of activity and perform and carry out contracts of any kind necessary to the accomplishment of the purposes of the Partnership, so long as said activities and contracts may be lawfully carried on or performed by a partnership under the laws of the State of XXXXXX."

7. *Transfer by General Partners.* "If a General Partner desires to sell or transfer all or part of his partnership interest to a person or entity who is not a General Partner, such transfer shall be permitted if, and only if, (i) the proposed transferee is to become a Limited Partner and shall be subject to the provisions of this Agreement having to do with the transfer of a Limited Partnership interest, or if (ii) the proposed transferee is approved as an additional or successor General Partner by unanimous consent of all partners."
8. *Amendments to Be Adopted Solely by the General Partners.* "Except as otherwise provided in the following section, the General Partners may, without the consent of any Limited Partner, amend any provision of this Agreement, and execute whatever documents may be required in connection therewith."
9. *Amendments Not Allowable.* "Unless approved by the Partner affected thereby, no amendment to this Agreement shall be permitted if the effect of such amendment would be to:

a. Extend the term of the Partnership as set forth as provided in the provisions of this Agreement having to do with the term of the Partnership;
b. Amend this section;
c. Convert the interest of a Limited Partner into the interest of a General Partner;
d. Alter the interest of a Limited Partner in the Profits, Losses, or Distributions of the Partnership, except for a change which is necessary to cure any ambiguity or correct or supplement any provision contained in this Agreement

which may be incomplete or inconsistent with any other provision contained herein;

e. Increase the amount of Capital Contributions payable by any Limited Partner;
f. Modify the limited liability of a Limited Partner or reduce or modify the liability of any General Partner; or
g. Otherwise increase the duties or liabilities of the General Partners or of any Limited Partner."

ValTip

The provisions concerning amendments to the partnership agreement provide a substantial level of authority to the general partner with input by the limited partners. However, many partnership agreements provide for a "power of attorney" clause whereby the limited partners specifically provide the authority for the general partner to act on their behalf. In addition, a restriction on transferability provides some level of protection to the limited partners regarding possible changes in partnership management of the partnership. These restrictions as well as the general partner(s)' legally binding fiduciary responsibility toward the limited partners may allow for some level of discount for lack of control when valuing a general partner interest.

10. *Capital Contributions of the Limited Partners.* "The Limited Partners shall be credited with the Gross Asset Value of the property contributed by them. As of the date of such contribution, the Capital Account balance of the Limited Partners shall equal XX percent of the aggregate Capital Account balances of all Partners."

ValTip

Like the provision for the general partner capital accounts, this provision makes it clear that all contributions are to be credited to the partners' account to avoid the "gift on formation" issues previously discussed.

11. *Limitation of Liability.* "No Limited Partner shall be liable for any debts, liabilities, contracts, or obligations of the Partnership; have any personal liability for the repayment of the Capital Contribution of any other Partner; and be required to lend any funds to the Partnership."

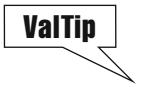
ValTip

One of the benefits to a limited partnership structure is the protection afforded the limited partners from the debts and obligations of the partnership or other partners.

12. *No Management Responsibility.* "No Limited Partner, when acting solely as such, shall take part in the management of the Partnership or transact any business for the Partnership. All management responsibility is hereby vested in the General Partners."
13. *No Authority to Act.* "No Limited Partner, when acting solely as such, shall have the power to sign for or bind the Partnership or transact business in the name of the Partnership. All authority to act on behalf of the Partnership is hereby vested in the General Partners."
14. *Access to Information.* "Each Limited Partner shall have the right to obtain, from time to time upon written request, for any purpose reasonably related to the Limited Partner's interest as a Limited Partner, any such requested information relating to the business of the Partnership and such other information as a limited partner has a right to obtain under the Act, provided that the Partnership may require the Limited Partners to pay the costs incurred by the Partnership in responding to any such request for information."
15. *Transfer by a Limited Partner.* "A Limited Partner may assign and transfer all or any part of such Limited Partner's Partnership interest only with the written consent of the General Partners.
    a. Any successor or transferee of a Limited Partner hereunder shall be bound by the provisions of this Agreement.
    b. Any assignee who is not a Partner at the time of the assignment shall be entitled to the allocations and distributions attributable to the interest assigned to it and to transfer and assign such interest in accordance with the terms of this Agreement; provided, however, such assignee shall not be entitled to the other rights of a Limited Partner until it becomes a substitute Limited Partner.
    c. No assignee of a Limited Partner's Partnership interest is entitled to become a substitute Limited Partner until the following have occurred:

        i. The General Partners shall have given their prior written consent, which consent may be withheld in his absolute discretion;
        ii. The transferring Limited Partner and the transferee shall have executed and acknowledged such other instrument or instruments as the General Partners may deem necessary or desirable to effect such admission;
        iii. The transferee shall have accepted, adopted, and approved in writing all of the terms and provisions of this Agreement as the same may have been amended; and
        iv. The transferee shall pay or obligate itself to pay, as the General Partners may require, all reasonable expenses connected with its

admission as a substitute Limited Partner, including but not limited to the cost of preparing appropriate amendments to this Agreement."



The above provisions are the foundation for selecting appropriate discounts for lack of control and lack of marketability for two reasons:

1. A limited partner, by definition, does not have any right to manage or control the partnership, thus eliminating his or her ability to determine the amount and timing of any distributions or asset liquidations of the partnership. This effectively eliminates some of the sources of return on the partner's investment.
2. In addition, the inability to readily transfer the interest or withdraw from the partnership eliminates the other avenue for a limited partner to receive a return on his or her investment.

Internal Revenue Code Chapter 14 Considerations

Chapter 14 (§§ 2701-2704 of the Internal Revenue Code [IRC]) was enacted by the Omnibus Budget Reconciliation Act of 1990 as a response to perceived "estate freeze" abuses by estate planning professionals and their clients. Chapter 14 focuses on the taxation of certain transfers of corporate and partnership interests (§ 2701), the impact of buy-sell agreements on such transfers (§ 2703), the effect that certain lapsing rights have on the value of property subject to such transfers (§ 2704), and the taxation of certain transfers in trust (§ 2702). Sections 2701, 2703, and 2704 can significantly affect the value of an interest in a closely held corporation and a family limited partnership. Therefore, a detailed discussion of these code sections is provided.

Section 2701. Section 2701 addresses transfers of interests in controlled entities. Subject to several definitions and qualifications, § 2701 applies to:

- A transfer of an interest in a corporation or partnership
- To an applicable family member
- Where the transferor or an applicable family member retains an "applicable retained interest" after the transfer and
- The transferor and applicable family members control the corporation or partnership following the transfer

If § 2701 applies, special valuation rules must be used in computing the value of the interest in the corporation or partnership that is transferred to an applicable family member.

These rules require that the value of the entire corporation or partnership must be computed first. That value will *generally* be attributed to the *transferred* interests except to the extent that the retained interests have regular and fixed distribution rights that are cumulative; other rights generally will be ignored.

Section 2701 normally would apply to the typical family limited partnership arrangement but for the exception provided under § 2701(a)(2)(B) for transfers of interest that are the "same class" as the retained interest except for "nonlapsing differences with respect to management and limitations on liability." In the standard FLP, general and limited partners do have the same interests in profits and losses of the partnership based on each partner's proportionate interest in the partnership, with general partners having management rights and limited partners having limitations on liability pursuant to applicable state law. Consequently, a transfer of a limited partnership interest should not be subject to the § 2701 valuation rules if the items of income, gain, loss, deduction, and credit are allocated among all the partners, including limited partners, based on their capital accounts.

By basing partnership allocations and distributions on the partners' capital account balances (i.e., pro rata allocations and distributions), the transfer of partnership interests should *not* be subject to § 2701 and the partnership agreement does not need to contain the complex provisions of § 704(b) (dealing with the substantial economic effect test that applies to special allocations).

Section 2703. Section 2703 provides that the value of property for estate, gift, and generation-skipping transfer tax purposes is determined without regard to any restrictions on the sale or use of the property unless:

- The restriction (e.g., a buy-sell agreement) is a bona fide business arrangement;
- The restriction is not a device to transfer property to family members for less than full and adequate consideration and
- The restriction must be comparable to similar arrangements entered into by persons in an arms' length transaction.

Section 2703 applies to a "right or restriction," whether explicitly fashioned as such, contained in the partnership agreement or similar document, or merely implicit in the capital structure of the entity.

If § 2703 applies, key provisions commonly found in an FLP agreement, such as restrictions against partners transferring interests in the partnership and the partners' inability to liquidate their interest until the end of a specified term of years, can be ignored.

Thus, it is important to establish that the partnership agreement:

- is a bona fide business arrangement
- is not a device to transfer the property to members of the decedent's family for less than full and adequate consideration in money or money's worth
- is an arrangement the terms of which are comparable to similar arrangements entered into by persons in arms' length transactions.

The IRS interpretation and application of § 2703 arguably is contrary to congressional intent. Specifically, the legislative history pertaining to § 2703(a) indicates

that, in enacting § 2703, Congress was concerned with perceived abuses of *buy-sell agreements and options*. For example, the *Congressional Record* states that:

> [T]he committee is aware of the potential of buy-sell agreements for distorting transfer tax value. Therefore, the committee establishes rules that attempt to distinguish between arrangements designed to avoid estate taxes and those with legitimate business agreements. The rules generally disregard a buy-sell agreement that would not have been entered into by unrelated parties acting at arm's length. 136 Cong. Rec. S15681 (10/18/90).
>
> The bill does not affect minority discounts or other discounts available under present law.

In the Conference Report under the heading "Buy-Sell Agreements and Options," it is stated:

> [T]he conferees do not intend the provision governing buy-sell agreements to disregard such an agreement merely because its terms differ from those used by another similarly situated [entity] . . . H.R. Rep. 964, 101st Cong., 2d Sess. 1137 (1990).

The Senate Report statement reads that, apart from the restrictions concerning acquisition or use of the property addressed in the bill, the bill does not otherwise alter the requirements for giving weight to a buy-sell agreement. For example, it leaves intact present law rules requiring that an agreement have lifetime restrictions in order to be binding on death.

These sources of legislative history demonstrate that Congress's intent in enacting IRC § 2703 was *not* to deny the existence of valid partnerships but rather to combat potential abuses associated with certain buy-sell agreements. Thus, the IRS interpretation of the statute, as set forth in the Technical Advice Memorandums (TAMS), is contrary to Congress's intent.

The IRS interpretation of IRC § 2703(a) also is inconsistent with the Code's statutory construction. The IRS view of § 2703(a) supersedes the need for § 2704 which covers restrictions in an agreement with respect to liquidation. Under Treasury Regulation § 25.2704-2(b), any option, right to use property, or agreement covered by § 2703(a) is not covered by § 2704(b). Thus, to the extent that § 2703(a) applies to a restriction, § 2704(b) is ignored.

If the IRS interpretation of § 2703(a) is adopted and the existence of a partnership can be ignored, all restrictions affecting the rights of partners are covered by § 2703(a) and nothing remains to be addressed by § 2704(b). Taken to its logical conclusion, the IRS view assumes that Congress passed a meaningless statute in the form of § 2704(b).

The IRS interpretation also is contrary to the Treasury Department's intent and the construction of regulations under § 2703. It does not appear that Treasury intended that § 2703 could be applied to disregard a partnership when valuing property for federal transfer tax purposes. This is evident in Treasury Regulation § 25.2703-1, which states that "a right or restriction may be contained in a partnership agreement, articles of incorporation, corporate bylaws, a shareholder's agreement, or any other agreement." This language is different from "a right or

restriction may be a partnership or a partnership agreement," which would be the appropriate language if Treasury had believed that legal entities established under state law should be ignored.

Additionally, if a partnership or corporation could be disregarded under § 2703, Treasury would not have stated in paragraph (b)(5) of Treasury Regulation § 25.2703-1 that:

> [I]f property is subject to more than one right or restriction described in [section 2703(a)], the failure of a right or restriction to satisfy the requirements of [section 2703(b)] does not cause any other right or restriction to fail to satisfy those requirements if the right or restriction otherwise meets those requirements. Whether separate provisions are separate rights or restrictions, or are integral parts of a single right or restriction, depends on all the facts or circumstances.

Logically, if a partnership can be disregarded under § 2703 as a "restriction," there is no need to elaborate on the subject of multiple restrictions. If the IRS view of § 2703 is adopted, paragraph (b)(5) is void of meaning. This could not have been Treasury's intent.

Since the IRS interpretation of IRC Code § 2703(a) is contrary to Congress's and Treasury's intent and to the statutory construction of the Code and regulations, it should be rejected, and § 2703(a) should not be applied in a manner that disregards the creation of a partnership. Nonetheless, the broad manner in which the statue and regulations are written, and the lack of substantial legislative history, enable the IRS to credibly argue that § 2703 can be applied to disregard a partnership for federal transfer tax valuation purposes.

Section 2704. Section 2704 is intended to accomplish two purposes:

1. Section 2704(a) treats the lapse of certain rights as a gift by, or as includible in the estate of, the owner of the lapsed right.
2. Section 2704(b) disregards certain restrictions on the ability of an entity to liquidate when determining the estate or gift tax value of the interest to which the restriction applies.

Section 2704(a). Section 2704(a) provides that, if certain control criteria exist, a lapse of any voting, liquidation, or similar right in a partnership will be treated as a transfer for gift tax purposes by, or, if applicable, will be included in the estate of, the individual who held the right immediately before the lapse. Section 2704(a) applies only if, both before and after the lapse, the individual holding the lapsed right immediately before the lapse and members of such individual's family control the partnership (§ 2704(a)(1)(B)).

The definition of control for partnerships is different for a general partnership than for a limited partnership. For a general partnership, control means "the holding of at least 50 percent of the capital or profit interests in the partnership" (§§2704[c][1] and 2701[b][2][B][i]). For a limited partnership, control means "the holding of any interest as a general partner" (§§2704[c][1] and 2701 [b][2][B][ii]).

Most family limited partnership agreements contain provisions that cause a general partnership interest to convert to a limited partnership interest upon the

occurrence of certain triggering events (e.g., transfer, death, bankruptcy, etc.). The conversion of a general partnership interest to a limited partnership interest does constitute a lapse of voting and liquidation rights and thus will be subject to § 2704(a). As a result, the general partnership interest must be valued as if there had been no lapse in the general partner's voting and liquidation rights. This means that any lapsed rights will be assumed to have not lapsed, thus increasing the value.

ValTip

To avoid the negative impact § 2704(a) can have on the estate tax value of a limited partnership interest, it is better if the limited partner does *not* own a general interest in the partnership at death. Alternatively, the limited partner can gift all of his or her limited interest before he or she dies.

Section 2704(b). Under § 2704(b), if a person transfers an interest in a partnership to (or for the benefit of) a family member and the transferor and members of the transferor's family control the entity immediately *before* the transfer, then the transferred interest will be valued without considering any "applicable restriction."

An "applicable restriction" means any restriction that limits the ability of a partnership to liquidate if:

- The restriction lapses, in whole or in part, after a transfer of an interest in the partnership to (or for the benefit of) a member of the transferor's family; or
- After the transfer, the transferor or any member of the transferor's family (either alone or collectively) has the right to remove the restriction in whole or in part (§ 2704[b][2]).

Section 2704(b)(3) provides two exceptions to the definition of an applicable restriction:

1. An applicable restriction does not include a commercially reasonable restriction which arises as part of any corporate or partnership financing with a person who is not related to the transferor, the transferee, or a family member of either.
2. An applicable restriction does not include any restriction imposed, or required to be imposed, by federal or state law.

Thus, despite the enactment of § 2704, the exceptions to § 2704 provide at least three situations where an FLP can be used to reduce the estate or gift tax value of a limited partnership interest. An FLP arrangement may generate estate and gift tax valuation discounts when:

- One or more of the general partners are not family members

- A liquidation restriction is imposed as part of a financing arrangement with an unrelated party
- A liquidation restriction is imposed under federal or state law.

A restriction that requires the unanimous consent of all of the partners to be removed should be respected notwithstanding § 2704(b), provided there is at least one unrelated general partner in the partnership and, under state law, the family members by themselves cannot have the restriction removed.

If one or more of the general partners are not family members and the liquidation restriction does not lapse in whole or in part after the transfer, the restriction should be respected because it cannot be removed by the transferor or members of his or her family either alone or collectively. However, the ability to remove the restriction is determined by reference to the state law that would apply but for a more restrictive rule in the governing instrument of the partnership.

If a general partnership interest is given to a charitable organization, for example, and the organization's consent is required, under the partnership agreement and applicable state law, to liquidate the partnership or an interest therein, arguably the provisions of § 2704(b) should not apply and the value of a limited interest in the partnership may be determined by applying valuation discounts thereto. This technique also could be used by giving a general partnership interest to a nonfamily member rather than to a charitable organization.

In summary, if an FLP violates any of the provisions of Chapter 14 (IRC §§ 2701, 2703 or 2704), it can be detrimental to the valuation of the FLP. It is best to avoid the application of Chapter 14.

For instance, under § 2701, if the only differences between the senior and junior equity instrument is that of management, voting, or liability, then the complex and negative impact of the code section will not apply.

Under IRC § 2703, it is important to make sure that all provisions under the three-part test are satisfied:

1. Bona fide business purpose
2. Not a device to transfer
3. Similar to other arm's-length transactions

Under IRC § 2704, it is important to make sure that none of rights in the FLP lapse upon death or transfer. The liquidation restrictions should be no more restrictive than the governing state law.

Accordingly, the underlying provisions of Chapter 14 add a substantial level of complexity and possible detrimental impact on the valuation. If these provisions are triggered, a qualified professional with a good grasp of these provisions should be consulted.

Valuation Process

The valuation of an FLP interest carries with it many of the same considerations that exist in the valuation of other closely held investments. For instance:

- Consideration must be given to the three basic approaches to valuation (asset, income, and market)

- The approach that is given the most weight is dependent on the interest being valued as well as the facts and circumstances in a given case.

The following are some of the key factors and definitions controlling FLP valuations.

Lack of an Available Public Market

Many partnerships are nontraded investment vehicles designed to be held by original family members until such time as the partnership sponsor elects to sell the underlying assets and make liquidating distributions to the partners. Unlike securities traded in the public markets, there is not a readily available reference source to assist in establishing these partnerships' fair market values. Although there exists a "secondary market" in which publicly held partnership interests are thinly traded, the transaction volume for them is insufficient to constitute a true market.

Net Asset Value

Due to the highly restricted nature of limited partnership interests in FLPs, the right to receive distributions represents the most significant economic benefit due to the limited partners. Net asset value represents the theoretical cash distribution (net of costs) that would be available to the partners in the event of an immediate, all-cash sale of the partnership's underlying assets.

Liquidation Rights of General and Limited Partners

While the value of liquidation rights is important to family members and should be considered in the valuation of any FLP interests, the significance of these rights is reduced in instances where liquidations are neither imminent nor certain.

Individually and collectively, partners may not be able to determine the timing or amount of distributions, control the purchase or sale of assets, or set management policies. Therefore, the complete lack of liquidation rights of the limited partners may add significantly to the discount for lack of control.

Fair Market Value

The appropriate measure of value for FLP limited partnership interests is fair market value. Long-standing regulations and rulings, such as Treasury Regulation 20.2031-1(b) and Revenue Ruling 59-60, 1959-1 C.B. 237, have provided definitions for fair market value and guidelines for estate and gift tax valuations for more than 40 years and have been referenced in numerous legal cases.

If fair market value is the appropriate standard of value, factors influencing the pricing of partnership interests in secondary transactions may be considered.

Investment Factors Considered by Limited Partnership Investors

Typical considerations of investors in partnership investments where a market exists, provide some foundation for understanding how an investor may look at an interest in an FLP. However, FLPs may have characteristics similar in nature but often inferior to those with some market in which to transact.

Buyers and sellers of securities (including partnership interests) express their preferences with respect to a number of investment characteristics when they evaluate buy and sell decisions. Buy/sell preferences for partnership interests are principally driven by these factors:

- Secondary market liquidity and investment control
- Cash flow and distributions
- Asset type and quality
- Management capabilities and fee structure
- Market capitalization
- Portfolio diversification
- Capital structure (debt versus equity)
- Liquidation time horizon
- Goodwill
- Recent historical performance
- Analytical complexity

Secondary Market Liquidity and Investment Control. Due to the restrictive nature of partnership agreements and state law, a limited partner in a publicly traded partnership may be explicitly prohibited from exercising control over the operations of the partnership. Given the absence of control, often the only means of exercising choice regarding a limited partnership interest is through selling the interest on the secondary market.

The market normally applies an adjustment for absence of control. This adjustment is often smaller for partnership interests that actively transact on the secondary market (exhibit liquidity) and larger for partnership interests that seldom or never change hands in secondary transactions (are virtually illiquid). The premise underlying these adjustments is that the negative consequences associated with lack of control are decreased in instances where a relatively liquid secondary market exists and are increased when liquidation through sale of the partnership interest in a secondary transaction is not possible or is severely limited.

Cash Flow and Distributions. Partnership interest investors can receive economic benefits through distributions of current cash flow and/or the cash resulting from the sale or financing of assets. However, since individual investors in limited partnership interests have limited control over partnership distribution policies and the timing of asset sales/financings or resulting distributions, they place heavy emphasis on current cash flow distributions when making investment decisions.

Since secondary market investors express a strong preference for current distributions, partnerships which distribute amounts in excess of existing current cash flow from existing cash balances usually carry larger discounts or lower value. Some partnerships historically accumulated cash and distribute it years after it was generated. This is an indication the current distribution level cannot be sustained.

Alternatively, partnerships that have strong current cash flows and distribution that are supported by current partnership operations usually will carry smaller discounts.

Asset Type and Quality. The economic benefits investors in partnership interests receive will depend on the performance of the existing partnership asset pool over the expected remaining investment-holding period. Unlike operating companies, partnerships generally do not sell or finance assets and reinvest the resulting proceeds in new assets. As a consequence, partnership investors are highly concerned with the type and quality of assets held in a partnership portfolio at the time of investment. Accordingly, adjustments to net asset value will be made for partnerships that own assets of inferior quality and/or that are out of favor with investors.

Management Capabilities and Fee Structure. For a partnership expected to operate indefinitely, an evaluation of management capabilities, fee structure, and financial incentives is critical in an investor's decision to buy or sell a partnership interest.

The market can reflect premiums for partnerships operated by respected management companies, which charge reasonable fees and have adequate incentives and a demonstrated capability to create value. The market usually penalizes management that has a poor reputation.

Market Capitalization. In the markets for publicly traded securities, a security's market capitalization influences the amount of attention it receives from investors. This principle also holds true in the secondary market for partnership securities. Larger issues with significant equity receive more attention from the brokerage community and from secondary market firms than smaller partnerships with less current equity. This increase in buy-side interest increases demand for the partnership interests and results in higher prices paid by secondary market buyers.

The market usually applies a larger adjustment to net asset value to reflect the negative influence of small market capitalization on the partnership's unit price.

Portfolio Diversification. Partnerships with concentrated ownership in a single asset or in a pool of assets with very similar investment characteristics are inherently more risky than partnerships that are broadly diversified. As such, the market usually adjusts the net asset value to account for the impact of such risks on the partnership's unit price.

Capital Structure (Debt versus Equity). Financial leverage increases risk. Accordingly, larger adjustments may be appropriate in partnerships with high debt levels.

Liquidation Time Horizon. For partnerships with extended liquidation time horizons, net asset value becomes a factor of diminishing importance and operating risks become a more significant consideration. The opposite is true for partnerships expected to liquidate in the near term. The market usually applies larger adjustments to net asset value for partnerships not expected to liquidate in the near term.

Goodwill. In a few instances, investors demonstrate strong favor for certain partnership investments due to name recognition or other "intangibles." In such instances, the market applies premiums to net asset value to account for the influence of these factors on the price of the partnership interest.

Recent Historical Performance. Partnership family members are strongly influenced by recent performance trends. Recent and significant changes in partnership's distributions/cash flow or reported changes in the performance of a partnership's underlying assets will impact the pricing of a partnership interest.

Analytical Complexity. Numerous factors can complicate the analysis of a partnership investment. Such factors may include complex financial reporting, convoluted joint venture structures, inadequate disclosure by management, and ownership of difficult-to-value assets.

Partnership family members favor simplicity. Accordingly, the market usually applies larger adjustments to net asset value for partnerships that are difficult to evaluate.

Other Factors That Affect Value and Need to Be Considered

- Provisions in the partnership agreement or in the certificate of limited partnership that the partnership shall continue to exist for a definite term of years, unless dissolved or liquidated prior thereto.
- The reputation, integrity and perceived competence of the partnership management/general partner.
- Lack of guarantees by general partner(s) regarding the return of partner capital contributions, allocations of profits or losses or cash distributions, including amounts to cover the tax burden.
- Exclusion of limited partners from participation in management and approval rights of limited partners required for certain major decisions.
- The means by which new managing general partners are elected.
- The number of investors in the partnership.
- Type and diversification of assets owned by the partnership.
- Amount of debt in the partnership's capital structure.
- Degree and reliability of the information flow to the limited partners.
- General partner rights to determine distributable cash.
- Current and historical amount of cash actually distributed to partners and assignees.
- Underlying cash flow coverage of yearly distributions made to partners and assignees.
- Capital call provisions obligating limited partners and assignees to contribute more capital.
- Limitations on the voluntary and involuntary transferability of general partner limited partner, and assignee interests.
- Presence of rights of first refusal for transfers.
- Size of the partnership interest.
- Universe of interested buyers.
- Limitations such as:

  - A transferee or assignee of an interest in the partnership will not become a substituted limited partner unless approved by the consent of all partners.
  - Whether the managing general partners or general partners are required to make an IRC § 754 election to set up the basis in the assets at the date of transfer. This would eliminate exposure to capital gains and increase depreciation on certain assets.
  - The right of the general partner to withdraw from the partnership prior to the expiration of its stated term.
  - The right of a limited partner or assignee to withdraw from the partnership prior to the expiration of its stated term.
- Provisions for dissolution of the partnership that do or do not mirror the provisions of state law.
- The "Default Rules" under state law. All states have partnership acts. However, not all states have the same provision language.

Evaluating and Understanding the Financial Components

The analyst needs to evaluate and understand the following financial components of a partnership at a minimum:

- Assets
- Liabilities
- Income
- Expenses
- Distributions
- Investment yield

The next sections provide an in-depth discussion of these key financial components.

Assets. The analyst needs to understand the underlying risk associated with an FLP's assets, incuding their liquidity, their ability to appreciate and generate cash flows, and their respective lives. Assets are usually some combination of closely held business interests, real estate, or marketable securities and cash, and possibly other assets, such as art collections or other valuable personal property and patents, copyrights or other intangibles. Generally, the less risky the underlying partnership assets, the higher the value of the FLP.

ValTip

Assets within a particular category may produce different impacts on value. For instance, if an FLP is holding undeveloped land instead of an income-producing property, its value will be influenced by the inability of the undeveloped land to generate a return to partners other than through ongoing appreciation and possible liquidation of the asset.

Another reason for understanding the asset base of an FLP is that it can have an impact on the sources of data to be used in the context of the valuation. Such data sources will be discussed in another section.

Liabilities. Liabilities are also important in the context of the valuation due to the impact they may have on the equity of the asset base as well as the cash flows generated from the underlying assets and operations. High levels of debt increase the exposure of the asset base and related cash flows to instability and other risks. The existence of debt allows fluctuations in asset value to impact and erode partnership ownership values. In addition, the existence of a debt service obligation creates a fixed cost component that can substantially impair the FLP's ability to cover other expenses or make distributions. Other similarly value-eroding factors are future obligations, such as balloon payments on loans, deferred maintenance costs, or development costs associated with real estate assets. All of these factors negatively impact the FLP's ability to provide a return to the partners and, thus, negatively impact value.

Income, Expenses, and Distributions. An FLP's ability to generate an income stream and provide distributions to partners is important. In some cases, the only distribution to partners comes upon liquidation of partnership assets and/or termination of the partnership. Potential investors seek ongoing liquidity and returns. Thus, FLP values are often heavily discounted due to lack of liquidity and lack of returns.

The analyst needs to understand the subject FLP's ability to generate income as well as its expense structure (including debt service) to fully assess their impact on distributions and value.

Investment Yield. All of the above factors directly influence FLP investment yield as does the general investment rule that high-yield assets typically carry higher levels of associated risk.

In FLPs, there are two types of yields to consider:

1. Yield within the partnership (i.e., net cash flow plus appreciation generated by the partnership)
2. Distribution yield to the partners (based on actual distributions made)

These yields may be different percentages because most partnerships do not distribute 100 percent of the cash flow generated, plus the first kind of yield includes capital appreciation on assets, if any.

Sources of Information to Assist in FLP Valuation

Numerous sources of information can assist in the valuation of FLPs. Some provide empirical data as a basis to understand the difference in value from the underlying assets or cash flow to the interest to be valued. These sources include the traditional

initial public offering (IPO) and restricted stock studies and the Quantitative Marketability Discount Model (QMDM) for quantifying a marketability discount, all of which have been discussed elsewhere in the book.

However, other available data sources are specific to the valuation of an FLP. The specific data source used will be dictated by the underlying asset breakdown of the FLP and the facts in a given case. Next we will focus on several of the more commonly used of such data sources.

Data Sources for Family Limited Partnerships Holding Marketable Securities. An FLP holding marketable securities has many characteristics in common with a closed-end fund. Accordingly, most practitioners utilize an analysis of closed-end mutual funds as a foundation for determining either a discount or a multiple to be applied to the net asset value of the FLP.

Some of the reasons that closed-end funds are useful sources of empirical data by which to value FLP interests follow.

1. *Breadth of asset mix and size of universe.* There are literally hundreds of closed-end funds available, all offering numerous specialized investment options.

The closed-end funds to be used should match as closely as possible the specific portfolio structure of the FLP. For instance, if the FLP is holding only technology stock and some blue chips, the closed-end funds selected should have a similar asset mix so that they will appropriately reflect the market perception of risk for the type of portfolio being held by the FLP.

2. *Fund unit prices represent minority interests.* The prices paid for publicly traded closed-end fund units represent minority interests that are otherwise fully marketable. Therefore, if the net asset values of a closed-end fund can be found and compared with the freely traded price of the fund units, it can be determined when and under what conditions the market applies an adjustment (positive or negative) to the net asset value of a minority interest.
3. *Ownership restrictions.* A closed-end fund issues a fixed number of shares that does not change over the life of the fund. Investors desiring to own shares in the fund must purchase the shares from other closed-end fund shareholders, not from the fund itself. When the demand for units in a closed-end fund increases, the unit price of the fund increases. This is more consistent with an FLP with a specified number of units issued.

ValTip

As a point of reference, publicly traded open-end mutual funds issue and redeem shares directly to and from the fund itself. Consequently, if the demand for an open-end fund increases, the fund issues more shares. An open-end mutual fund normally prices unit purchases and redemptions at the transaction cost adjusted net asset value. Therefore, these types of funds will continually dilute and grow with purchases and shrink with sales. Typically, they do not experience the relative price fluctuations that closed end funds do.

4. *Similar base for net asset values.* The net asset value of a closed-end fund is the aggregate value of the stocks and bonds owned by the fund, and the transactions in a closed-end fund take place at the current trading unit price of the fund. This trading unit price may be equal to, more than, or less than the net asset value per unit.
5. *Similar investor lack-of-control issues.* An investor in a closed-end fund does not have any ability to control, manage, or otherwise determine the nature of the investments made by the fund manager, although he or she has some assurance that the fund will continue to invest in certain types of investments based on its stated investment objectives. The investor's only choice is whether to continue as an investor in the fund or to liquidate the investment and invest in a different fund. Accordingly, ownership interests in closed-end mutual funds have many of the same lack of control characteristics and restrictions as FLP ownership interests have.

ValTip

For this reason, analysis of closed-end funds with similar investment characteristics to the subject FLP can provide an indication of the adjustment to net asset value that the market would require.

6. *Abundance of data sources.* Since closed-end funds are publicly traded, numerous sources of data regarding them are available. In fact, any service that provides public market data typically can provide information related to closed-end funds.

   One such source is Morningstar—Principia Pro.[1] This subscription service allows the analyst to sort over 600 closed-end funds using various search criteria including fund type, performance, risk, portfolio, and operations. Each search criteria provides a wealth of subcategories to enable the analyst to nar-

[1] Morningstar Principia Pro for Closed-End Funds, Morningstar © 1996–2001, *www.morningstar.com.*

row the scope of the search. A sample of search results from Morningstar is included as Exhibit 12.6 later in this chapter. Morningstar provides historical and current statistics on a fund-by-fund basis as well as the trading price per unit and net asset value per unit. The analyst can evaluate such data based upon industry sectors, portfolio profile, investment objectives, investment duration, and performance to more readily determine the differences between the selected funds and the subject FLP interest.

ValTip

Since closed-end funds are publicly traded, the difference between the trading price and net asset value has nothing to do with marketability. In addition, some funds are thinly traded and, as a result, are not good indicators of market dynamics.

Data Sources for Family Limited Partnerships Holding Real Estate. Two primary sources of information typically are utilized for valuing an FLP holding real estate: (1) data regarding transactions in real estate investment trusts (REITs), and (2) data regarding transactions in publicly held syndicated real estate limited partnerships (RELPs). Information on REITs is available through brokers who promote such investments or through the National Association of Real Estate Investment Trusts (NAREIT). Data on RELPs are available through Partnership Profiles, Inc.[2] The data from these sources need to be selected carefully to get a meaningful comparison to the subject FLP.

Ownership interests in REITs and publicly held real estate LPs are considered comparable to FLP interests because they have no:

- Control over the distribution of cash flows
- Control over the reinvestment of the cash flows
- Control over the liquidation of the assets
- Management control or voice

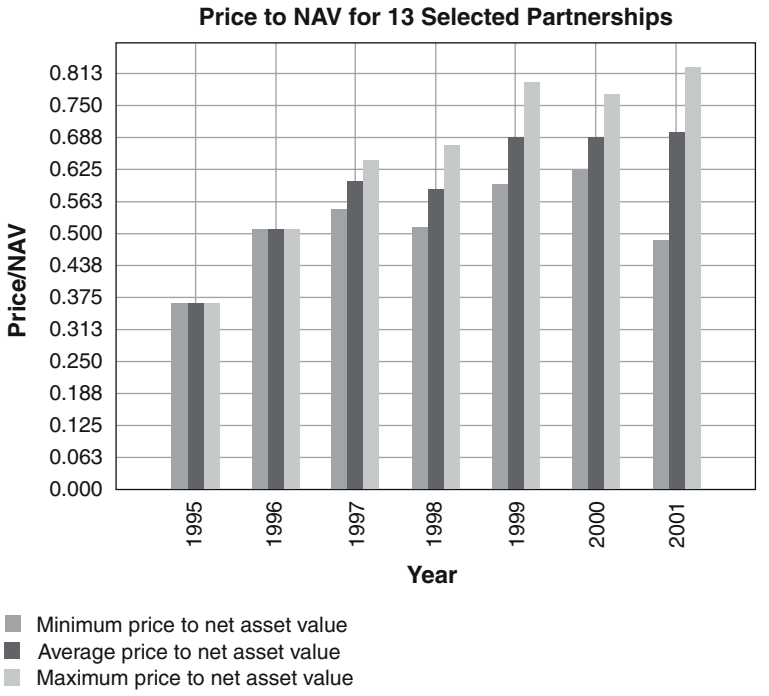
However, unlike most FLPs, REITs have required distribution of substantially all income on an annual basis. This means that they often are not considered as applicable as a source of data for FLP valuation purposes.

1. *REIT Data:* Shows various statistics and historical yields or returns for several types of REITs. These REITs are usually broken down into property type as well as REIT type. REIT data also includes:
   a. Debt structure;
   b. Distribution history;
   c. Property type; and
   d. Property diversification.

[2] Annual Partnership Re-Sale Discount Study, Published by Partnership Profiles Inc., Also, Annual Partnership Profiles Minority Interest Discount Database, *www.PartnershipProfiles.com.*

2. *RELP Data: The Partnership Spectrum* (a publication of Partnership Profiles, Inc.)[3] conducts an annual study of secondary market transactions of publicly held real estate limited partnerships to determine the difference between the partnership trading value and the net asset value. These studies primarily sort the information by partnership type and debt structure. However, they also provide information such as distribution yield and trading price per unit versus net asset value per unit. In addition, the analyst can access a specific partnership's financial data filed with the Securities and Exchange Commission for purposes of better analyzing the fit with the subject FLP interest. The chart in Exhibit 12.1 illustrates the differences in discounts for a group of partnerships over the years.[4]

Exhibit 12.1 Discount Variation



Valuation Approaches

The valuation of an FLP interest utilizes the same approaches that are used in the valuation of business interests. The asset, income, and market approaches can all be applicable to FLP interests. The degree of applicability is dependent on the analyst's judgment coupled with the facts and circumstances in the case.

[3] *The Partnership Spectrum* (Annual May/June Issue). The Partnership Spectrum is published bi-monthly by Partnership Profiles, Inc., P.O Box 7938 Dallas, Texas 75209, *www.PartnershipProfiles.com*.

[4] Partnership Profiles Minority Interest Database, Partnership Profiles, Inc. © 2000–2002, *www.PartnershipProfiles.com*.

For many analysts, FLP valuations are not based on an income approach for two reasons:

1. Many FLPs hold assets that do not generate an ongoing income stream, making the only applicable benefit stream the cash from liquidation at some undefined time in the future.
2. The individual asset valuations used in the cost or market approaches may have already incorporated the FLP's benefits streams, and valuing them using the income approach may count them twice.

Double counting typically can happen when an FLP holds income-producing real estate. In this case, the underlying real estate appraisal is based on an income or market approach that includes valuing the anticipated benefits from the real estate. To use the same benefit streams again in an income approach could be a mistake. Accordingly, many FLP valuations are based on an asset and/or market approach.

Generally, the analyst will do an analysis of the assets, liabilities, income, expenses, and distributions as discussed above. He or she will do data searches to extract comparable market data from the various data sources. The resulting information will be the foundation for the discount from net asset value of the partnership using the asset approach.

Alternatively, this discount can be applied as a market multiple to net asset value in the context of a market approach. For example, if the closed-end fund analysis provided a discount from net asset value of 10.0 percent, this would imply a market multiple of 90.0 percent. The value estimate would be the same; the only difference would be in the means of presentation.

ValTip

The derived discount from Net Asset Value (NAV) can be viewed in two ways. The first is as a discount as follows:

$$NAV \times (1 - D) = Value \quad \text{Where: } D = Discount$$

$$\$1{,}000{,}000 \times (1 - .20) = \$800{,}000$$

Or it can be viewed as a market multiple as follows:

$$NAV \times Multiple = Value$$

$$\$1{,}000{,}000 \times .80 = \$800{,}000$$

Some cases have successfully used a combination of a cost approach and an income approach. However, these cases typically involve FLP interests in which the FLP had the characteristic of a holding entity with regard to real estate and the

characteristics of an operating entity because the real estate was a working ranch or farm. It may be less meaningful to use a combination method such as this for an FLP interest holding marketable securities.

ILLUSTRATIVE CASE STUDY

Assume that Chance Family FLP held certain assets as shown in Exhibit 12.2.

Exhibit 12.2 Asset Portfolio

	Marketable Securities:		
Asset Type	**Historical Cost**	**Value**	**% of Asset Mix**
Money Market Funds	$ 251,295	$ 251,295	8.5%
Bond—Fixed Income	265,947	290,278	9.8%
Equities	1,187,937	2,174,981	73.5%
Equity Funds	200,662	241,134	8.2%
Totals	$1,905,841	$2,957,688	100.0%

Real Estate:

Assets	Type	FMV
Property 1	Commercial	$1,125,000
Property 2	Commercial	845,000
Property 3	Commercial	238,000
Totals		$2,208,000

Other Assets: Chance Family FLP held other assets in the form of $10,000 in cash in the bank at the date of valuation. Accordingly, the total assets held by Chance Family FLP is shown in Exhibit 12.3.

Exhibit 12.3 Total Assets

Assets	**Type**	**Amount**	**% of Asset Mix**
Property 1	Commercial	$1,125,000	21.7%
Property 2	Commercial	845,000	16.3%
Property 3	Commercial	238,000	4.6%
Marketable Securities		2,957,688	57.1%
Cash		10,000	0.2%
Totals		$5,175,688	100.0%

The analysis of the historical income, expenses, and distribution is as shown in Exhibit 12.4.

As can be seen from the previous information, Chance Family FLP holds a substantial amount of assets with no debt. Approximately 50 percent of the assets are held in a liquid diversified marketable security portfolio with the remainder held in

Exhibit 12.4 Analysis of Historical Income, Expenses, and Distributions

	1995	1996	1997	1998	1999	2000	Average
Income							
Taxable Interest Income	$ 1,732	$ 975	$ 982	$ 975	$ 541	—	$ 868
Tax-Exempt Income	29,657	24,101	33,473	28,509	33,644	29,238	29,770
Dividend Income	29,380	35,716	44,237	38,544	46,290	32,967	37,856
Net Rents	174,300	174,300	174,300	174,300	174,300	174,300	174,300
Net Capital Gain/(Loss)	7,829	24,563	149,899	17,523	173,850	27,762	66,904
Total Income	$242,898	$259,655	$402,891	$259,851	$428,625	$264,267	$309,698
Expenses							
Guaranteed Payments	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 6,000	$ 5,500	$ 5,917
Accounting Fees	—	3,200	—	5,544	3,058	4,291	2,682
Other Expenses	99	238	130	130	33	80	118
Taxes	60	97	82	72	156	144	102
Total Expenses	$ 6,159	$ 9,535	$ 6,212	$ 11,746	$ 9,247	$ 10,015	$ 8,819
Net Income	$236,739	$250,120	$396,679	$248,105	$419,378	$254,252	$300,879
Distributions	—	$ 31,362	$152,617	$216,123	$ 56,650	$ 59,190	$ 85,990

	1995	1996	1997	1998	1999	2000	Average
Income							
Taxable Interest Income	0.71%	0.38%	0.24%	0.38%	0.13%	0.00%	0.28%
Tax-Exempt Income	12.21%	9.28%	8.31%	10.97%	7.85%	11.06%	9.61%
Dividend Income	12.10%	13.76%	10.98%	14.83%	10.80%	12.47%	12.22%
Net Rents	71.76%	67.13%	43.26%	67.08%	40.66%	65.96%	56.28%
Net Capital Gain/(Loss)	3.22%	9.46%	37.21%	6.74%	40.56%	10.51%	21.60%
Total Income	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

(continues)

Exhibit 12.4 *continued*

	1995	1996	1997	1998	1999	2000	Average
Expenses							
Guaranteed Payments	2.47%	2.31%	1.49%	2.31%	1.40%	2.08%	1.91%
Accounting Fees	0.00%	1.23%	0.00%	2.13%	0.71%	1.62%	0.87%
Other Expenses	0.04%	0.09%	0.03%	0.05%	0.01%	0.03%	0.04%
Taxes	0.02%	0.04%	0.02%	0.03%	0.04%	0.05%	0.03%
Total Expenses	2.54%	3.67%	1.54%	4.52%	2.16%	3.79%	2.85%
Net Income	97.46%	96.33%	98.46%	95.48%	97.84%	96.21%	97.15%
Distributions	0.00%	12.08%	37.88%	83.17%	13.22%	22.40%	27.77%
Distributions/Net Income	0.00%	12.54%	38.47%	87.11%	13.51%	23.28%	28.58%
Average Total Income Yield							5.98%
Average Net Income Yield							5.81%
Average Distribution Yield							1.66%

unencumbered, income-producing real estate. Additionally, the expenses associated with the partnership are low in relation to the total income generated. However, the yields on the investments are low on a cash flow basis, resulting in a total yield of less than 6 percent. The distribution yield (amount paid to partners) is even lower and is below 2 percent.

The analysis incorporated a search of the Partnership Profiles database as well as the Morningstar database to find a portfolio of securities and real estate that is comparable to the holdings of Chance Family FLP. Our search of the Partnership Profiles data was based on finding commercial properties with no debt and that are distributing partnerships. Additionally, the search was for those properties that had less than 10 properties owned. (See Exhibit 12.5.)[5]

With respect to the marketable security portfolio, the Morningstar database was searched for the funds that were considered "blue chip" and had fundamental objectives first of growth and secondarily of income. We wanted a diversified mix across various sectors but invested primarily in domestic equities due to the holdings of Chance Family FLP. These funds can be summarized as shown in Exhibit 12.6.[6]

Chance Family FLP's expected yield is much lower than the average yield for distributing partnerships and the funds analyzed above. The Chance Family FLP holdings are much smaller than those of the funds and partnerships. This smaller size typically provides for less diversification as well as more exposure to risk. Accordingly, an investor typically requires a higher return from this type of investment compared to the marketplace, given the additional elements of risk inherent in the nature of this investment. Typically these partnerships are more marketable and desirable than Chance Family FLP.

Based on the above information, we then apply the various discount factors to the net asset value of Chance Family FLP in the context of an asset approach as shown in Exhibit 12.7.

For illustrative purposes, we have used the average from the various studies. Some analysts compare specific partnerships and put more weight on certain ones depending on the similarities. Due to the higher risk in Chance than in the real estate partnerships and the closed-end funds, we could have increased the weighted discount from 18.2 percent to somewhere above that amount, say 22 percent. This is subjective but still is warranted since Chance is smaller and enjoys a lower yield, among other risks.

This calculation is representative of the discount for lack of control as it relates to the net asset value in an asset approach. Alternatively, the discount can be converted to a multiple of .78 to be applied to the net asset value in the context of a market approach. After this discount is applied, the resulting value is of a minority, marketable interest in Chance Family FLP.

Accordingly, the analyst needs to apply a marketability discount to obtain a value of the Chance Family FLP interest on a minority, nonmarketable basis. For illustration purposes we have applied a marketability adjustment of 30 percent, as shown in Exhibit 12.8. The analyst would have to support the use of this adjustment based on the analysis and comparisons to various marketability benchmark studies. Marketability discounts are discussed in Chapter 8 of this book.

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[5] *Ibid.*

[6] Morningstar Principia Pro for Closed-End Funds, Morningstar © 1996–2001, *www.morningstar.com*. Used with permission.

Exhibit 12.5 Partnership Profiles

Partnership Detail	Rancon Income Fund I	Wells Real Estate Fund III-A	Wells Real Estate Fund IV-A	Wells Real Estate Fund V-A	Wells Real Estate Fund VI-A
Units Outstanding	14,555	19,635,965	1,322,909	1,556,416	2,188,724
Num. of Props.	3	6	4	5	9
Prop Types	C, R	C, R	C, R	C	C, R
NAV Per Unit	$368.00	$1.09	$12.17	$11.77	$10.75
Price Per Unit	$263.50	$0.76	$7.70	$7.35	$ 7.50
Annualized Distribution	$ 20.00	$0.07	$0.64	$0.62	$ 0.83
Revenue	$908,000	$1,137,000	$684,000	$706,000	$1,057,000
Operating Surplus	$331,000	$1,653,000	$1,049,000	$1,192,000	$1,789,000
GCF	$22.74	$0.08	$0.79	$0.76	$0.82
NCF	$14.70	$0.08	$0.74	$0.72	$0.81
Property at Cost	$8,320,000	$15,574,000	$9,463,000	$12,178,000	$17,885,000
Cash	$1,208,000	$129,000	$46,000	$22,000	$155,000
Borrowings	—	—	—	—	—
Total NAV	$5,356,240	$21,403,202	$16,099,803	$18,319,016	$23,528,783
Invested Capital	$5,356,240	$21,403,202	$16,099,803	$18,319,016	$23,528,783
Price to NAV	0.716 : 1	0.697 : 1	0.633 : 1	0.624 : 1	0.698 : 1
Borrowings to NAV	0.00%	0.00%	0.00%	0.00%	0.00%
Yield to NAV	5.40%	6.40%	5.30%	5.30%	7.70%
Yield to Price	7.60%	9.20%	8.30%	8.40%	11.10%
Operating Surplus to NAV	6.20%	7.70%	6.50%	6.50%	7.60%
GCF to NAV	6.20%	7.70%	6.50%	6.50%	7.60%
NCF to NAV	4.00%	7.60%	6.10%	6.10%	7.50%

Partnership Detail—Summary

Units Outstanding	Num. of Props.	Prop Types	Other
24,718,569	27	C, R	
4,943,714	5.4	<=Averages	
Average NAV Per Unit			$80.76
Average Price Per Unit			$57.36
Average Annualized Distribution			$4.43
Average Revenue			$898,400.00
Operating Surplus			$1,202,800.00
Average GCF			$5.04
Average NCF			$3.41
Average Property at Cost			$12,684,000.00
Average Cash			$312,000.00
Average Borrowings			—
Average Total NAV			$16,941,408.80
Invested Capital			$16,941,408.80
Price to NAV			0.6736
Borrowings to NAV			0.00%
Yield to NAV			6.02%
Yield to Price			8.92%
Operating Surplus to NAV			6.90%
GCF to NAV			6.90%
NCF to NAV			6.26%

Exhibit 12.6 Morningstar Blue Chip Funds (Used with Permission)

	Price	NAV	Premium/ Discount	Percent in Cash	Percent in Stocks	Percent in Bonds	Totals	Yield
Avalon Capital	18.13	18.51	-2.1%	N/A	N/A	N/A	N/A	3.2%
Bergstrom Capital	224.00	226.55	-1.1%	1.4%	96.1%	0.0%	97.5%	12.0%
Blue Chip Value	7.55	8.17	-7.6%	7.3%	92.6%	0.0%	99.9%	11.8%
Morgan Funshares	7.00	8.18	-14.4%	1.2%	93.7%	0.0%	94.9%	10.0%
Morgan Grenfell Smallcap	11.75	13.40	-12.3%	5.7%	94.3%	0.0%	100.0%	11.2%
Average	53.69	54.96	-7.5%	3.9%	94.2%	0.0%	98.1%	9.6%
Median	11.75	13.40	-7.6%	3.6%	94.0%	0.0%	98.7%	11.2%
High	224.00	226.55	-14.4%	7.3%	96.1%	0.0%	100.0%	12.0%
Low	7.00	8.17	-1.1%	1.2%	92.6%	0.0%	94.9%	3.2%

	Utilities	Financials	Cyclicals	Durables	Staples	Services	Health	Tech	Totals
Avalon Capital	0.0%	46.4%	1.7%	0.0%	29.2%	22.6%	0.0%	0.0%	99.9%
Bergstrom Capital	0.1%	7.9%	7.5%	0.2%	6.9%	13.4%	29.8%	26.9%	92.7%
Blue Chip Value	2.2%	20.0%	11.7%	2.0%	0.0%	11.1%	7.2%	28.3%	82.5%
Morgan Funshares	0.0%	0.0%	8.1%	2.7%	41.7%	25.0%	22.5%	0.0%	100.0%
Morgan Grenfell Smallcap	0.0%	9.1%	9.0%	2.3%	0.0%	22.5%	13.8%	26.5%	83.2%
Average	0.5%	16.7%	7.6%	1.4%	15.6%	18.9%	14.7%	16.3%	91.7%
Median	0.0%	9.1%	8.1%	2.0%	6.9%	22.5%	13.8%	26.5%	92.7%
High	2.2%	46.4%	11.7%	2.7%	41.7%	25.0%	29.8%	28.3%	100.0%
Low	0.0%	0.0%	1.7%	0.0%	0.0%	11.1%	0.0%	0.0%	82.5%

Exhibit 12.7 Discount Factors

Property	Amount		Average Discount From Studies	Weighted Discount
Property 1	$1,125,000	21.7%	32.64%	7.09%
Property 2	845,000	16.3%	32.64%	5.33%
Property 3	238,000	4.6%	32.64%	1.50%
Marketable Securities	2,957,688	57.1%	7.50%	4.28%
Cash	10,000	0.2%	7.50%	0.02%
Totals	$5,175,688	100.0%	Weighted Avg. =>	18.2%

Exhibit 12.8 Fair Market Value of a 10 percent L.P. Interest (Illustration Only)

Assets	
Cash	$ 10,000
Securities	2,957,688
Real Property	2,208,000
Other Assets	—
Total Assets	$5,175,688
Total Liabilities	—
Adjusted Net Assets	$5,175,688
Interest Being Valued	10.0%
Prorata Enterprise Value	$ 517,569
Valuation Adjustments (22%—Lack of control)	113,865
Adjusted Net Assets (noncontrolling, marketable basis)	$ 403,704
Valuation Adjustments (30.0%—Lack of marketability)	121,111
Fair Market Value of a Ten Percent (10.0%) Limited Partnership Interest (on a noncontrolling, nonmarketable basis)	$ 282,593
Fair Market Value of a Ten Percent (10.0%) Limited Partnership Interest (on a noncontrolling, nonmarketable basis)—rounded	$ 283,000

Many of the marketability discount studies show discounts in the range of 30 percent to 45 percent. We selected 30 percent to reflect the lower discount attributable to the real estate portion (Equity/Net Assets) of the analysis. There is some limited liquidity in sales of interests of partnerships from Partnership Profiles whereas there is practically instant marketability for sales of interests in the publicly traded closed-end funds. Some analysts will separate the two components (real estate and

marketable securities) and apply the discounts separately. For example the discount for the real estate may have been 15 percent and the securities, 40 percent. This would produce a weighted discount for lack of marketability (DLOM) of 30 percent as follows:

(Real Estate FMV as a% of total asset mix)	(DLOM)	+	(Securities FMV as a% of total asset mix)	(DLOM)	=	WEIGHTED DLOM
(.427)	(15%)	+	(.573)	(40%)	=	29%, say 30%

The above case was presented for illustration purposes only relative to the use of the specific data. The numbers, discounts, level of discounts, and the presentations can vary considerably depending on the situation. This example illustrates a technique in a specific presentation style and may not be appropriate in a specific engagement. However, as stated earlier, it is important to describe the factors associated with a specific engagement, and their impact on value, including but not limited to:

- Partnership agreement
- Ownership structure
- State law provisions
- Interest being valued
- Standard of value
- Discount analysis
- IPO studies
- Restricted stock studies
- Other empirical evidence

Although many analysts believe that valuing FLPs is a simple task, at times it can prove to be time consuming and difficult.

CHAPTER 13

Summary of Court Case Issues

This chapter discusses civil and tax cases that affect business valuations. The discussion primarily focuses on tax cases, since these are more general in application and often contain detailed information on valuations. Civil cases vary by jurisdiction and are very often inconsistent between jurisdictions. We have included a few cases on dissenters rights and shareholder oppression to convey a sense of some current issues and discrepancies. Absent are court cases in marital dissolution since they vary so dramatically from jurisdiction to jurisdiction.

Almost all the cases referenced here are from 1999 to 2001. Although knowledge of older court cases can be important and relevant (see Chapter 8), the cases from the last three years, particularly in the tax area, have dealt with many of the controversial issues faced by analysts today. In the Tax Court cases, we have organized the cases according to major valuation issue, for example, discounts, built-in gains tax, weighted average cost of capital (WACC) and Capital Asset Pricing Model (CAPM). These cases convey a strong sense of the direction of the courts. The format for this chapter is brief but relevant bullets to allow for easy access to important information and the general direction of recent court decisions concerning important valuation topics. However, it is recommended that analysts read the cases to provide the full context of the issues. Some of the cases will appear more than once since they address several important topics. Furthermore, the case information is presented basically as presented in the court opinions including various divergent views of various experts.

TAX CASES[1]

Tax cases generally spring from the United States Tax Court, the United States Courts of Appeal, or various state courts. Tax disputes can be litigated in state courts only after the disputed tax has been paid. Since the payment of taxes is not required to litigate in United States Tax Court (Tax Court), it is very often the venue of choice. Cases heard in Tax Court may be appealed to the United States Court of Appeal for the district in which the taxpayer resides. The various Courts of Appeal often have different precedential law, and analysts would be wise to study the case law for the Court of Appeal to which their client might appeal a Tax Court deci-

[1] The full texts of Tax Court cases from 1999 forward are available at *www.ustaxcourt.gov*. Full texts of all cases discussed in this chapter are also available free at *www.fairmarketvalue.com*.

sion. It is common for the Tax Court to discuss the case law for the Court of Appeal, which would have jurisdiction over the case if the taxpayer were to appeal the Tax Court decision.

In its weekly *Internal Revenue Bulletins,* the Internal Revenue Service (IRS) announces its positions via an Action on Decision for selected cases with the following description:

> The recommendation in every Action on Decision will be summarized as acquiescence, acquiescence in result only, or nonacquiesence. Both "acquiescence" and "acquiescence in result only" mean that the Service accepts the holding of the court in a case and the Service will follow it in disposing of cases with the same controlling facts. However "acquiescence" indicates neither approval nor disapproval of the reasons assigned by the court for its conclusions; whereas "acquiescence in result only" indicates disagreement or concern with some or all of those reasons. Nonacquiescence signifies that the Service does not agree with the holding of the court and, generally will not follow the decision in disposing of cases involving other taxpayers. In reference to an opinion of a circuit court of appeals, a nonacquiesence indicates that the Service will not follow the holding on a nationwide basis. However, the Service will recognize the precedential impact of the opinion on cases arising within the venue of the deciding circuit.[2]

In addition to understanding case law, analysts should study the statutes that apply for the relevant state jurisdiction and consult with an attorney familiar with case law in the jurisdiction. For example, different state statutes regarding the rights of partners or limited liability company members can cause different values for otherwise identical entities. Again, readers are advised to read the full summaries or full text of any court case for a more complete understanding of the facts and circumstances particular to each issue within each case.

Use of Previous Tax Court Cases as Support for Valuations

While it is important and useful to understand Tax Court decisions, practitioners should not rely on them in arriving at fair market value since each valuation must rely on its own unique facts and circumstances.

Estate of Berg[3]

- The taxpayer expert relied on judicial precedent to arrive at the discounts for lack of control and lack of marketability.
- The Court said, "The fact that petitioner found several cases which approve discounts approximately equal to those claimed in the instant case is irrelevant. Therefore, in deciding the appropriate discounts in the instant case we will take into account all relevant facts and circumstances of petitioner's interest in [the

[2] *Internal Revenue Bulletin.*
[3] *Estate of Edgar A. Berg v. Commissioner*, T.C. Memo 1991-279 (June 20, 1991).

company], and do not consider the amount of discount applied in other cases cited by petitioner as persuasive."
- The IRS expert relied on empirical data and adjusted for the specific circumstances of the subject company, and the Court accepted this.

Estate of Foote[4]

- The taxpayer expert arrived at a blockage discount of 22.5 percent by selecting 18 Tax Court cases dealing with blockage discounts that were "factually similar to the matter under discussion." The blockage discounts allowed in these cases ranged from 8.1 percent to 52.9 percent with a mean of 26 percent and a median of 19 percent. The appraiser averaged the mean and the median blockage discounts to arrive at the 22.5 percent.
- The Tax Court was highly critical of this approach and accepted the report of the IRS expert.

Discounts for Lack of Control and Marketability

The most commonly discussed valuation issues in court cases relate to discounts for lack of control and marketability. Since together these discounts can reduce the entity-level value by 50 percent or more and their derivation is subject to significant levels of professional judgment, they are fertile ground for dispute.

Estate of Simplot v. Commissioner[5]

- Court allowed 40 percent marketability discount for voting stock.
- Court allowed 35 percent marketability discount for nonvoting stock.
- The company also owned Micron stock (considered a nonoperating asset). No marketability discount allowed from this stock's publicly traded value.

Mandelbaum v. Commissioner[6]

- The Court used restricted stock and pre-initial public offering (IPO) studies as a starting point.
- The Court compared [the company] to these studies in the following areas:
  - Private versus public sales of the stock
  - Financial statement analysis
  - Company's dividend policy
  - Nature of the company, its history, its position in the industry, and its economic outlook
  - Company's management
  - Amount of control in transferred shares

[4] *Estate of Dorothy B. Foote v. Commissioner*, T.C. Memo 1999-37 (February 5, 1999).
[5] *Estate of Richard R. Simplot v. Commissioner*, United States Court of Appeals for the Ninth Circuit, 249 F.3d 1191 (May 14, 2001); *Estate of Richard R. Simplot v. Commissioner*, 112 T.C. No. 13 (March 22, 1999).
[6] *Mandelbaum v. Commissioner*, T.C. Memo 1995-255 (June 12, 1995).

  - Restrictions on transferability of stock
  - Holding period for stock
  - Company's redemption policy
  - Costs associated with making a public offering
- Based on the comparison of the subject company to these factors, the Court arrived at a 30 percent marketability discount.

Estate of H.A. True Jr. et al. v. Commissioner[7]

- This case involved six entities including both S corporations and partnerships.
- The Court allowed a 20 percent marketability discount for a controlling interest in a corporation despite the testimony of one of the taxpayer experts that it should be 0 percent.
- The judge was displeased with the way the restricted stock studies and pre-IPO studies were applied to specific entities (but still allowed a 30 percent discount for lack of marketability) and noted:

> On the other hand . . . we are troubled by the lack of any clear connection between the [first expert's] report's general discussion of restricted stock and pre-IPO studies and the marketability discounts applied to the True Oil subject interests. For instance, there was no showing that the industries represented in the studies had risks and other attributes similar to the oil and gas industry. In fact, one of the pre-IPO studies specifically excluded natural resource companies from the companies being examined.

- Eighty-Eight Oil was a Wyoming general partnership whose partnership agreement required the partners to jointly manage its affairs. According to the Court, "Thus under Wyoming law, each partner had an equal vote in (among other things) appointing management, setting business policies, making distributions, buying and selling assets, and amending the partnership agreement."
- The Court allowed only a 10 percent minority discount for 24.84 percent and 34.47 percent ownership interests.
- In the valuation of general partner interests in True Ranches, the Court dismissed the premium studies for publicly traded companies used to determine the minority discount because a general partner can exert more control than a minority shareholder. The Court also dismissed the use of publicly registered limited partnerships since these studies dealt only with limited partnership interests, not with general partnership interests. The Court ultimately decided on a 15 percent minority interest discount.

Robert T. and Kay F. Gow v. Commissioner[8]

- The case is important because of "nested" discounts.
- Despite ignoring the entity value calculated by taxpayer expert, the Court adopted this expert's lack of control and marketability discounts as presented.

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[7] *Estate of H.A. True Jr. et al. v. Commissioner,* T.C. Memo 2001-167) (July 6, 2001).
[8] *Robert T. and Kay F. Gow v. Commissioner*, T. C. Memo 2000-93 (March 20, 2000).

- Taxpayer owned a noncontrolling interest in Williamsburg Vacations, Inc. (WVI), which in turn owned beneficial one-third interest in a joint venture partnership, Powhatan Plantation (Powhatan).
- A 15 percent discount for lack of control and 30 percent discount for lack of marketability were allowed on Powhatan.
- A 20 percent discount for lack of control and 30 percent discount for lack of marketability were allowed on one valuation date and a 30 percent discount for lack of control and 30 percent discount for lack of marketability allowed on a second valuation date for WVI.

Estate of Jones v. Commissioner[9]

- Subject entities were family limited partnerships
- Jones Borregos Limited Partnership (JBLP)
  - The taxpayer expert claimed a 55 percent secondary market discount and a 20 percent lack of marketability discount. (The secondary market discount is derived from Partnership Profiles and is "an overall discount encompassing discounts for both lack of control and marketability for minority interests in syndicated limited partnerships.")
  - The IRS expert claimed no discounts should apply.
  - The Court ultimately allowed an 8 percent lack of marketability discount for this partnership. The key to the Court's decision was that it only took a 51 percent aggregate interest to remove a general partner and if no successor general partner were designated, the partnership would dissolve.
- Alta Vista Limited Partnership (AVLP)
  - This partnership comprised four 16.915 percent L.P. interests.
  - The taxpayer expert claimed a secondary market discount of 45 percent and a lack of marketability discount of 20 percent.
  - The IRS appraiser claimed a secondary market discount of 38 percent and a 7.5 percent lack of marketability discount.
  - The Court concluded that the taxpayer expert's "cumulation of discounts does not survive a sanity check."
  - After considering other factors, the Court concluded a 40 percent secondary market discount and an 8 percent lack of marketability discount were appropriate.

Knight v. Commissioner[10]

- The IRS expert testified about the "fair value" of the partnership interests instead of the fair market value, and the Court did not consider his testimony. The use of "fair value" was part of a failed IRS strategy to attack the partnership.
- The taxpayer expert claimed a portfolio discount of 10 percent based on a "report stating that conglomerate public companies tend to sell at a discount of about 10 to 15 percent from their breakup value."
- The Court noted that the Knight family partnership was not a conglomerate public company and the appraiser gave no convincing reason why the partnership's mix of assets would be unattractive to a buyer.

[9] *Estate of Jones v. Commissioner*, 116 T.C. No. 11 (March 6, 2001).
[10] *Knight v. Commissioner*, 115 T.C. No. 36 (November 30, 2000).

- The Court disallowed this discount in full.
- The taxpayer expert claimed a 10 percent minority discount based on the discounts to net asset value for closed-end bond funds.
- The Court noted, "The 10 funds that [the appraiser] chose are not comparable to the Knight family partnership. We find unconvincing his use of data from noncomparable entities to increase this discount. However, on this record, we believe some discount is appropriate based on an analogy to a closed-end fund."
- The appraiser claimed a 30 percent discount for lack of marketability based on initial public offerings of common stock from 1985 to 1993.
- According to the Court, ". . . he did not show that the companies . . . were comparable to the partnership, or explain how he used this data to estimate the discount for lack of marketability." The appraiser also listed seven reasons why a discount for lack of marketability applies, but he did not explain how those reasons affect the amount of the discount for lack of marketability.
- The Court concluded that the expert "was acting as an advocate and that his testimony was not objective."
- The Court did believe some discount was appropriate and allowed a combined discount for lack of control and marketability of 15 percent.
- Ten judges agreed with this opinion and two concurred in result only. Two judges signed a separate opinion concurring in result.
- In a dissenting opinion, one judge said that the valuation focus should have been on the assets transferred rather than on the partnership interests received. He would have valued the gifts at 100 percent of the values of the assets transferred to the partnership, less the values of the partnership interests retained by the taxpayers.

Estate of Beatrice Ellen Jones Dunn v. Commissioner[11]

- The decedent owned 62.96 percent of Dunn Equipment, a Texas C corporation.
- The Tax Court allowed the estate to average the income and asset valuation approaches but weighed the income approach at 35 percent, not the 50 percent used by the estate.
- After averaging the two approaches, the Court allowed application of the 15 percent marketability discount, which was undisputed by the experts.
- The Court then allowed a discount of 7.5 percent for lack of supermajority control, as claimed in the original tax return's appraisal, despite the taxpayer's argument on brief that the discount should be 10 percent.

Estate of Davis[12]

- Taxpayer experts claimed a 35 percent discount for lack of marketability (exclusive of the built-in gains adjustment) based on restricted stock and pre-IPO studies and publicly registered limited partnerships.

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[11] *Estate of Beatrice Ellen Jones Dunn v. Commissioner*, T.C. Memo 2000-12 (January 12, 2000).

[12] *Estate of Artemus D. Davis v. Commissioner*, 110 T.C. 530 (June 30, 1998).

- The IRS expert argued a 23 percent discount based on selected restricted stock and pre-IPO studies.
- The Tax Court concluded approximately a 32 percent discount (inferred from its value conclusion).
- The Court was critical that the taxpayer experts did not provide details about how they related each of the studies specifically to the case of the subject company.
- The Court was critical that the IRS expert did not use more of the pre-IPO studies.

Estate of Paul Mitchell v. Commissioner[13]

- The taxpayer's first expert concluded a 45 percent combined discount for lack of control and marketability to a freely traded control level of value.
- The taxpayer's second expert concluded a 45 percent discount for lack of marketability to a freely traded noncontrol level of value.
- The IRS expert concluded a 30 percent discount for lack of marketability to a freely traded noncontrol level of value.
- The Tax Court determined a 35 percent combined discount for lack of control and marketability to a freely traded control level of value.
- The case was appealed to the Ninth Circuit, who reversed and remanded, saying

> First, the Tax Court appears to be comparing "apples and oranges." The expert witnesses used various starting values for JPMS [entity] and calculated their discounts differently. The experts relied upon by the Tax Court . . . conducted their analyses based on a hypothetical or estimated publicly traded value of the minority interest of JPMS stock to determine the initial value of the company before applying discounts for lack of marketability. The Tax Court, on the other hand, started with an acquisition value, the $150 million bid by Gillette Co., and began discounting from there. Acquisition value and publicly traded value are different because acquisition prices involve a premium for the purchase of the entire company in one deal. Such a lump-sum valuation was not taken into account when the minority interest value of the stock was calculated by the experts. In general, the acquisition price is higher, resulting in an inflated tax consequence for the Estate.
>
> Second, the court does not explain how it reached a combined discount of 30–45 percent. . . . Finally, the Commissioner offers us a multitude of avenues through which one might arrive at a 35 percent combined discount. This strained effort, in and of itself, is the most telling evidence of the inadequacy of the Tax Court's explanation. We are left to speculate, like the Commissioner, as to the basis for the final valuation of the Estate's JPMS stock.

[13] *Estate of Paul Mitchell v. Commissioner*, 87 AFTR2d (May 2, 2001); *Estate of Paul Mitchell v. Commissioner*, T.C. Memo 1997-461 (October 9, 1997).

Estate of Frank A. Branson v. Commissioner[14]

The case is regarding the Savings Bank of Mendocino County (Savings) and Bank of Willits:

- The decedent owned 12.89 percent of the outstanding shares and two other family members owned 16.72 percent and 17.35 percent, respectively.
- The remaining 53.04 percent was widely distributed with many of the shareholders owning less than 3 percent.
- The company's stock was not traded on any established exchange or over the counter, but the investment department of Savings maintained an informal list of people who were interested in buying shares of its stock.
- The parties agreed that the best indication of the "market value" of Savings stock was the actual sale price of the shares.
- The taxpayer argued that the actual sales price was "just the starting point for deciding fair market value—that discounts should be applied to the sale price for minority interest, lack of marketability, and blockage."
- The IRS argued that the actual sale price was already reflective of the discounts for lack of control and marketability.
- The taxpayer expert relied on the pre-IPO and restricted stock studies.
- The Court faulted the taxpayer expert's use of the restricted stock studies, and found his

> . . . reliance on the restricted stock studies for the size of the discount factor to be misplaced, since the studies analyzed only restricted stock that had a holding period of 2 years. The Savings shares were not restricted either by law or by agreement. The fact that Savings maintained a waiting list of willing buyers is evidence that the stock's history of low trading volume is due to the shareholder's preference to hold Savings shares for investment rather than for sale. As the investment time horizon of an investor in Savings stock evidently is long term, we do not believe that marketability concerns rise to the same level as a security with a short-term holding period like a restricted stock. Therefore, we find no persuasive evidence in the record to support reliance on the restricted stock studies in determining an appropriate marketability discount.

- The Court further rejected the use of pre-IPO studies, noting that the amount received by the decedent in the sale shortly before his death is more likely "40 to 45 percent less, rather than more, than the price at which the same shares would sell in an IPO."
- The IRS expert relied on restricted stock and pre-IPO studies and 19 opinions of the Tax Court decided after 1983 where there was a discount separately and specifically identified for either lack of marketability or restrictions on transfer.
- The discounts in the studies and the cases ranged from 10 percent to 45 percent, and the appraiser concluded that a 20 percent discount was appropriate.
- The Court disallowed all discounts for lack of control and marketability but allowed a 10 percent blockage discount.

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[14] *Estate of Frank A. Branson v. Commissioner*, T.C. Memo 199-231 (July 13, 1999).

Bank of Willits (Willits)

- At the date of death, there were 48 Willits shareholders, with decedent owning 6.25 percent of the outstanding shares.
- The taxpayer expert applied a 45 percent discount for lack of marketability based on the "usual restricted stock and IPO studies."
- As in Savings, the judge rejected the use of these studies and gave little weight to that portion of the expert's opinion.
- The IRS expert used the same studies as in Savings and concluded a 25 percent discount for lack of marketability.
- Again, the judge found no persuasive evidence to rely on the restricted stock and pre-IPO studies but allowed a 20 percent blockage discount.

Mellinger v. Commissioner[15]

- The sole valuation dispute was the discounts to apply.
- One of the two taxpayer experts determined the appropriate marketability discount was 32 percent and the other 31 percent.
- The expert for the IRS determined that a 15 percent "blockage" discount was appropriate.
- The IRS expert was criticized for relying on a single study in determining the discount, ignoring an entire body of restricted stock studies.
- The Court noted "each expert excluded information that contradicted his result" and was generally critical of all of the appraisal experts.
- The Court concluded that none of the experts was correct and a 25 percent marketability discount was appropriate. (The Court's opinion also referred to this as a blockage discount.)

Estate of William J. Desmond v. Commissioner[16]

- The taxpayer's expert calculated fair market value under the asset, discounted cash flow, and market approaches.
- Under the market approach, he added a 25 percent control premium to bring the minority value determined by this approach to the control value owned by the decedent.
- The expert analyzed a range of discounts for lack of marketability and concluded that a range of 25 to 45 percent was appropriate.
- After considering 10 factors, including the potential environmental liabilities, the expert concluded that a 25 percent marketability discount was appropriate.
- The IRS expert's engagement was limited to determining the appropriate marketability discount.
- The expert determined the appropriate discount for lack of marketability was between 0 and 5 percent.

[15] *Estate of Harriet R. Mellinger v. Commissioner*, 112 T.C. No.4 (January 26, 1999).
[16] *Estate of William J. Desmond v. Commissioner*, T.C. Memo 1999-76 (March 10, 1999).

- Because of the limitations imposed by the IRS on its expert, the Court totally rejected that expert's report.
- The IRS argued that applying a discount for potential environmental liabilities was improper because these discounts were implicit in the unadjusted value calculation under the income method and the market method.
- The court agreed that this was true with the market method, but not for the income method.
- The court analyzed six factors that favored a high marketability discount:

  1. Lack of public market
  2. Profit margins below industry averages
  3. Right of first refusal by other shareholders for stock sales to outsiders
  4. Lack of prospects for a public offering
  5. The large size of the interest valued
  6. Environmental liabilities not already considered

- The only factor favoring a lower marketability discount was the company's past practice of distributing most of the company's profit to shareholders through higher than market compensation.
- The Court concluded that a 30 percent lack of marketability discount was appropriate, which included 10 percent for environmental liabilities. The Court applied this 30 percent discount only to the income approach and used 20 percent under the market approach since the Court had concluded that environmental liabilities are implicit in this latter approach.
- The Court determined that the petitioner should have taken into account a control premium under the income approach since this method "assumed the continuation of Deft's [the company] present policies and did not account for a change in control."
- The Court accepted the 25 percent control premium used by the taxpayer under the market method and applied that same percent to the income approach unadjusted value.

Estate of Helen Bolton Jameson v. Commissioner[17]

- One of the taxpayer experts claimed a 10 percent marketability discount for the existence of a minority shareholder, which the Tax Court called a "nuisance discount."
- The Tax Court rejected the "nuisance discount," but did recognize the existence of a marketability discount, which it allowed at 3 percent.
- The Tax Court further ruled that a hypothetical purchaser would not liquidate the company, and based on that, disallowed selling costs.

Estate of Weinberg v. Commissioner[18]

- The decedent held a general power of appointment over a marital deduction trust that owned a 25.235 percent limited partnership interest.

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[17] *Estate of Helen Bolton Jameson v. Commissioner,* T.C. Memo 1999-43 (February 9, 1999).
[18] *Estate of Etta Weinberg v. Commissioner*, T.C. Memo 2000-51 (February 15, 2000).

- The taxpayer expert subtracted a 35 percent marketability discount "based on market studies of illiquid securities," particularly the Securities and Exchange (SEC) study.
- The IRS expert calculated a 15 percent marketability discount using the Quantitative Marketability Discount Model (QMDM).
- The Court first calculated the implied minority discount. Since both experts had started with a minority income stream, this discount was implicit in the capitalized income value.
- Based on a comparison of the net asset value to the fair market value before the marketability adjustments determined by each expert, the Court determined a 42.7 percent minority discount had been taken by the taxpayer and 20.1 percent by the IRS.
- The judge then calculated that the total discounts taken were 62.7 percent by the taxpayer and 32.1 percent by the IRS.
- The Court disagreed with the use of the QMDM analysis because "slight variations in the assumptions used in the model produce dramatic differences in the results." The Court's analysis showed how changes in the QMDM assumptions would double the marketability discount calculated by the model and concluded, "Because the assumptions are not based on hard data and a range of data may be reasonable, we did not find the QMDM helpful in this case."
- The taxpayer expert's marketability discount was likewise rejected because the expert did not take into account certain characteristics of the subject limited partnership: (1) consistent dividends, (2) the nature of the underlying assets, and (3) the low degree of financial leverage.
- The Court determined a 20 percent marketability discount was appropriate.

Janda v. Commissioner[19]

- Both experts agreed on the marketable minority value, which included a 10 percent minority discount.
- The taxpayer expert used the Quantitative Marketability Discount Model (QMDM) to arrive at a 65.77 percent discount for lack of marketability.
- The IRS appraiser relied largely on prior Tax Court cases to arrive at a 20 percent marketability discount.
- The Tax Court did not agree with either appraiser, concluding a 40 percent combined discount for lack of control and marketability was appropriate.
- Regarding QMDM, the Court expressed "grave doubts about the reliability of the QMDM model to produce reasonable discounts, given the generated discount of over 65 percent."

Built-In Gains Tax

Built-in gains arise when the tax basis of assets inside of an entity are lower than their fair market values. This is most significant in a C corporation but can also be a factor in S corporations, partnerships, and limited liability companies. Prior to the

[19] *Janda v. Commissioner*, T.C. Memo 2001-24 (February 2, 2001).

repeal of the *General Utilities* Doctrine[20] in 1986, taxpayers could avoid paying tax on the sale of appreciated assets at both the C corporation and shareholder level. With the repeal of *General Utilities,* C corporation gains are taxed both at the shareholder and corporation level.

Estate of Davis[21]

- This is the first post-*General Utilities* repeal Tax Court case to allow reduction in fair market value for built-in gains.
- One taxpayer expert and the IRS expert took 15 percent additional marketability discount (about $9 million) to account for built-in gains tax.
- One taxpayer expert reduced net asset value by approximately $25 million in built-in gains tax.
- Tax Court allowed $9 million in built-in gains tax as a reduction in arriving at fair market value.

Eisenberg v. Commissioner[22]

- The Second Circuit overturned a Tax Court decision that disallowed consideration of the built-in gains tax in determining fair market value.
- The remanded case was settled without trial.
- The IRS "acquiesced" in this case.[23]

Estate of Richard R. Simplot[24]

- The company owned a sizable holding in Micron Technology, a nonoperating asset.
- The taxpayer expert subtracted selling costs, 5 percent for blockage, and a 6 percent minority discount in arriving at the Micron fair market value.
- The taxpayer expert also reduced the publicly traded value of the Micron stock for 100 percent of the tax on the difference between the value of the stock and the underlying tax basis.
- The IRS expert assumed that any blockage discount on the Micron stock would be offset by a premium on the sale of the stock.
- The IRS expert subtracted a 3.825 percent discount for underwriting costs.
- This expert also deducted the entire built-in gains tax on the appreciation of the Micron stock above its tax basis.
- The Tax Court adopted the position of the IRS expert.

Estate of Helen Bolton Jameson v. Commissioner[25]

- The taxpayer owned 97 percent of a company owning appreciated timber property.

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[20] *General Utilities & Operating Co. v. Helvering,* 16 AFTR 1126 (December 9, 1935).
[21] *Estate of Artemus D. Davis v. Commissioner*, 110 T.C. 530 (June 30, 1998).
[22] *Eisenberg v. Commissioner*, 155 F.3d 50, 57 (2d Cir. 1998).
[23] *Internal Revenue Bulletin 1999-4* (January 25, 1999).
[24] *Estate of Richard R. Simplot v. Commissioner*, 112 T.C. No. 13 (March 22, 1999).
[25] *Estate of Helen Bolton Jameson v. Commissioner,* T.C. Memo 1999-43 (February 9, 1999).

- The taxpayer experts deducted the built-in gains tax in arriving at fair market value.
- The IRS expert disagreed with the reduction in value for the built-in gains tax, arguing that it "is founded on a counter-intuitive premise; that is, a hypothetical and instantaneous sale of the same assets which the willing buyer has just purchased."
- In dealing with the built-in gains tax discount, the Tax Court said:

> While it may still be possible after the repeal of the *General Utilities* doctrine to avoid recognition of built-in capital gains, respondent has failed to convince us that any viable options for avoidance would exist for a hypothetical buyer of decedent's Johnco stock. The tax strategies suggested by [taxpayer's expert], who is not an expert in taxation, can at best defer the recognition of built-in capital gains, but only by deferring income and ultimately cash-flow, and suggest the work of an advocate rather than a disinterested expert witness. Perhaps anticipating that the avoidance strategies offered by his expert do not withstand scrutiny, respondent argues on brief that petitioner could "hire some creative and resourceful tax practitioner" and since "someone might think of a way to avoid the tax effect of an immediate liquidation," the tax on built-in capital gains is only speculative. Contrary to respondent, we do not think [respondent's expert] has demonstrated any real possibilities for avoidance of the built-in capital gains tax by Johnco, let alone done so in a manner sufficient to prevent petitioner from being able to carry its burden of final persuasion, as respondent asserts.

Estate of Beatrice Ellen Jones Dunn v. Commissioner[26]

- The Tax Court allowed the estate to average the income and asset valuation approaches, but weighed the income approach at 35 percent, not the 50 percent used by the estate.
- The Court weighed the prospects for liquidation of the underlying assets (whose value was far greater than the capitalized cash flow or earnings value) in determining the weights to be applied to each of the two approaches.
- The Court used this same liquidation probability in allowing only 5 percent of the built-in gain tax instead of the 100 percent claimed by the estate.

Estate of Jones v. Commissioner[27]

- The fair market value of the partnership assets substantially exceeded their tax bases.
- The taxpayer expert claimed a discount for this excess while the IRS appraiser said no discount should be applied.

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[26] *Estate of Beatrice Ellen Jones Dunn v. Commissioner*, T.C. Memo 2000-12 (January 12, 2000).
[27] *Estate of Jones v. Commissioner*, 116 T.C. No. 11 (March 6, 2001).

- The estate, the IRS, and both experts agreed that tax on the built-in gain could be avoided by a § 754 election. The only situation identified where a § 754 election would not be made was the taxpayer expert's example of a syndicated partnership with "lots of partners . . . and lots of assets" where the administrative burden would be great.
- The Court allowed no discount, concluding "the buyer and seller of the partnership interest would negotiate with the understanding that an election would be made and the price agreed upon would not reflect a discount for built-in gains."

Estate of H.A. True Jr. et al. v. Commissioner[28]

- The taxpayer expert valued one of the companies assets by consulting auction guides, trade magazines, and new and used equipment dealers.
- The Court said, "This suggests an active market for these types of assets. However, Black Hills Trucking's fixed assets had a low tax basis relative to their resale value, which would trigger a tax liability on sale. Also, a willing seller would incur other transaction costs to dispose of the company's assets either on a bulk sale or an item-by-item basis."
- The built-in gains issue was one of the items considered in arriving at a 20 percent discount for lack of marketability for a controlling interest discussed supra.

Buy-Sell Agreements

Determining whether a buy-sell agreement fixes a value for estate and gift purposes can be a difficult situation. Analysts are advised to review this with the client's attorney. Agreements that represent testamentary devices must be ignored not only in setting value but also in the consideration of that agreement in determining other potential discounts such as for lack of marketability.

Estate of H.A. True Jr. et al. v. Commissioner[29]

- The analysis focused on the factors in *Estate of Lauder v. Commissioner*[30] (Lauder II).
- There are four parts to the Lauder II test:

  1. Is the offering price fixed and determinable under the agreement?
  2. Are the agreements binding during life and at death?
  3. Are agreements entered into for bona fide business reasons?
  4. Are agreements substitutes for testamentary dispositions?

- For number four above, the testamentary purpose test, the Court considered the following:
  - What was the condition of decedent's health when he entered into the agreement?
  - Was there negotiation of buy-sell agreement terms?

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[28] *Estate of H.A. True Jr. et al. v. Commissioner*, T.C. Memo 2001-167) (July 6, 2001).
[29] *Estate of H.A. True Jr. et al. v. Commissioner*, T.C. Memo 2001-167) (July 6, 2001).
[30] *Estate of Lauder v. Commissioner*, T.C. Memo 1992-736.

- Was there consistent enforcement of buy-sell provisions?
- Did the parties seek significant professional advice in selecting the formula price? On this issue the Court said,

> We reject any notion that [the accountant] was qualified to opine on the reasonableness of using the tax book value in the True family buy-sell agreements. [The accountant] was closely associated with the True family; his objectivity was questionable. More importantly, he had no technical training or practical experience in valuing closely held businesses. The record shows no technical basis (in the form of comparables, valuation studies, projections) for [the accountant's] assertion that tax book value represented the price at which property would change hands between unrelated parties.

- Did the parties obtain or rely on appraisals in selecting formula price?
- Were significant assets excluded from the formula price?
- Was there periodic review of formula price?
- Did the business arrangements with True children fulfill Dave True's testamentary intent?
- Was there adequate consideration?

- The Court concluded the buy-sell agreements were testamentary devices that did not set the value for estate and gift purposes.

Voting versus Nonvoting Stock

Voting shares of stock may be considered to have a higher fair market value than otherwise identical nonvoting shares.

Estate of Richard R. Simplot[31]

- The Tax Court assigned a 3 percent premium to 18 shares of Class A voting stock in J.R. Simplot Co.
- The Court calculated the premium based on the entire net worth of the company, saying, "a hypothetical buyer" of the shares "would gain access to the 'inner circle' of J.R. Simplot Co., and by having a seat at the Class A shareholder's table, over time, the hypothetical buyer potentially could position itself to play a role in the Company."
- The Tax Court considered "the characteristics of the hypothetical buyer" and supposed the buyer could be a Simplot, a competitor, a customer, a supplier, or an investor.
- The Tax Court also assumed that a buyer "would probably be well-financed, with a long-term investment horizon and no expectations of near-term benefits." The Tax Court went on to envisage the day when the hypothetical buyer of the 18 shares would hold the largest block because the three other Simplot children had died and their shares had been divided among their descendants.

[31] *Estate of Richard R. Simplot v. Commissioner*, United States Court of Appeals for the Ninth Circuit, 249 F.3d 1191 (May 14, 2001); *Estate of Richard R. Simplot v. Commissioner*, 112 T.C. No. 13 (March 22, 1999).

- The Ninth Circuit determined that the Tax Court erred in three areas:

  1. *Hypothetical Willing Buyer*. The Tax Court departed from the hypothetical willing buyer standard because the Tax Court believed that "the hypothetical sale should not be constructed in a vacuum isolated from the actual facts that affect value." The Ninth Circuit believed the Tax Court relied on "imagined facts" and said, "In violation of the law the Tax Court constructed particular possible purchasers."
  2. *Error in Valuing All Voting Shares*. The Tax Court's premium calculation was incorrect. The Tax Court calculated the premium that all the Class A shares as a block would command and then divided this premium by the number of Class A shares. The Ninth Circuit said, "the Tax Court valued an asset not before it—all the Class A stock representing complete control. There was no basis for supposing that whatever value attached to complete control a proportionate share of that value attached to each fraction of the whole."
  3. *Lack of an Increased Economic Advantage*. Even a controlling block of stock should not be valued at a premium for estate tax purposes, unless the IRS can show that a purchaser would be able to use the control in a manner that assured an increased economic advantage worth paying a premium for. The Ninth Circuit noted that, " 'No seat at the table' was assured by this minority interest; it could not elect a director. The Commissioner points out that Class A shareholders had formed businesses that did business with Simplot. If these businesses enjoyed special advantages, the Class A shareholders would have been liable for breach of their fiduciary duty to the Class B shareholders" (citations omitted).

- The Ninth Circuit said that much of the IRS argument was devoted to speculation as to what might happen after the valuation date, noting, "Speculation is easy but not a proper way to value the transfer at the time of the decedent's death. In Richard Simplot's hands at the time of transfer his stock was worth what a willing buyer would have paid for the economic benefits presently attached to the stock. By this standard, a minority holding Class A share was worth no more than a Class B share"(citation omitted).
- The Tax Court's decision was reversed and remanded for entry of a judgment in favor of the estate.
- One judge dissented to this opinion, believing the Tax Court was correct.

Wall v. Commissioner[32]

- This case concerns a dispute over the value of nonvoting shares.
- After noting that this was a case that should have settled without resorting to Tax Court, the Court accepted the IRS valuation, including a 40 percent discount for lack of marketability and a 2 percent discount for nonvoting stock.

[32] *Wall v. Commissioner*, T.C. Memo 2001-75 (March 27, 2001).

Capital Asset Pricing Model, Discount Rate, and Weighted Average Cost of Capital

The Tax Court has generally not viewed the use of CAPM favorably because of its reliance on beta. It also has generally not been supportive in the use of WACC. However, this may have more to do with faulty application than the models themselves.

Estate of Hoffman v. Commissioner[33]

- The IRS expert used CAPM.
- He determined a 7.5 percent risk-free rate of return based on 30-year Treasury bonds and a 7.2 percent equity risk premium based on Ibbotson data.
- The expert used a beta of 1 because "he could not obtain a reliable estimate of beta from comparable publicly traded stocks."
- He also used Ibbotson data to arrive at a 5.3 percent premium for "unsystematic risk to account for investment in a small company stock."
- Subtracting a 3 percent growth rate, he arrived at a final capitalization rate of 17 percent.
- The Tax Court disagreed with using CAPM for a small, closely held company, terming the failure to calculate beta a "significant shortcoming in the use of the CAPM to value a closely held corporation."
- The Court said, "[The IRS expert] has failed to provide the evidence necessary for us to determine whether use of CAPM was appropriate, and whether the figures used in his calculation were reliable."
- The Court was also critical of the expert's use of the 5.3 percent small stock premium without explaining why "such a figure is appropriate for WLI [company] specifically."

Estate of Emily F. Klauss v. Commissioner[34]

- The IRS expert used CAPM to determine the discount rate, while the taxpayer expert used the build-up method.
- The IRS expert chose a beta of 0.7 to estimate Green Light's [company] systematic risk.
- The Court disagreed, noting, "Green Light was a small, regional company, had customer concentrations, faced litigation and environmental claims, had inadequate insurance, was not publicly traded, and had never paid a dividend. A beta cannot be correctly calculated for the stock in a closely held corporation; it can only be correctly estimated on the basis of the betas of comparable publicly traded companies."
- The Court also concluded that the CAPM method was not appropriate because Green Light had little possibility of going public.
- The Court accepted the small company stock premium using Ibbotson Associates data.

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[33] *Estate of Hoffman v. Commissioner*, T.C. Memo 2001-109 (May 9, 2001).
[34] *Estate of Emily F. Klauss v. Commissioner*, T.C. Memo 2000-191 (June 27, 2000).

Estate of Mary D. Maggos v. Commissioner[35]

- Both taxpayer and IRS experts used the discounted cash flow (DCF) method.
- The Tax Court expressed concern with the inherent difficulty of determining the residual value, which was "neither minimal nor easily calculated."
- The Court expressed further concern with the use of the Capital Asset Pricing Model (CAPM) and the weighted average cost of capital (WACC) in valuing closely held small companies by citing a previous case as follows: "We do not believe that CAPM and WACC are the proper analytical tools to value a small, closely held corporation with little possibility of going public."
- The IRS expert used a 0.76 beta; however the Tax Court was not persuaded that the guideline companies used in this analysis were appropriate.
- The Tax Court did not believe an interest rate less than 2 percent above the government bond rate was appropriate in the WACC calculation for borrowed funds.
- The Tax Court concluded a 17 percent discount rate was appropriate rather than the 12 percent used by the IRS expert and the 22.24 percent used by one of the taxpayer experts.

Gow v. Commissioner[36]

- The taxpayer expert used a 32 percent discount rate, using the build-up method, including a 9.02 percent small-stock premium and a 10 percent company-specific risk premium.
- The IRS used two employees as experts, a real estate appraiser and a business appraiser.
- The IRS real estate appraiser valued the inventory of unsold timeshare units and the undeveloped land owned by Powhatan.
- This appraiser used a discounted cash flow method to value the unsold timeshare units, utilizing a 25 percent discount rate using "the band of investment" method, which is a "synthesis of mortgage and equity * * * [yield] rates, which market data discloses as applicable to comparable properties."
- In arriving at the 25 percent discount rate, she combined the safe rate of return from the 10-year U.S. Treasury bond (9.17 percent and 8.47 percent on the two valuation dates) and the equity rate expected by land and real estate developers (between 15 and 30 percent).
- The IRS business appraiser then used the net asset approach using the real estate values determined by the real estate appraiser.
- The Tax Court found the testimony of the IRS experts "more persuasive."
- The Court agreed with the IRS experts that that taxpayer expert's report contained "fatal errors":
  - Understating the income stream
  - Overstating the discount rate
  - Applying a 15-percent contingency discount
- The Court adopted the prediscount valuation of the IRS experts.

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[35]*Estate of Mary D. Maggos v. Commissioner*, T.C. Memo 2000-129 (April 11, 2000).
[36]*Robert T. and Kay F. Gow v. Commissioner*, T. C. Memo 2000-93 (March 20, 2000).

Gross v. Commissioner[37]

- Subject company was an S corporation.
- One taxpayer expert arrived at a 19 percent cost of equity capital, stating "The required rate of return is determined by comparison to rates of return on investments of similar risk." He then ranked various investments by quality, as of December 1991, beginning with long-term Government bonds and ending with the category "extreme risk." One ranking consists of CC Bond and "Very Small Cap. Companies," which showed "Yield to Maturity" of "18+." The next higher ranking, "CCC Bond" and "Small Cap. Companies" showed a "Yield to Maturity" of 21+.
- This expert testified that he chose 19 percent because it fell within the range of yields for very small capitalization companies.
- He checked this conclusion by building the rate of return from Ibbotson data as follows:
  - A 2.1 percent risk-free rate (which he had reduced by 4 percent for inflation)
  - A 7 percent equity risk premium
  - A 1 percent company-specific risk
  - A 4.8 percent small-company risk premium, for a total (rounded) of 19 percent
- At trial, he admitted that he used Ibbotson Associates data for the small-company risk premium but that G&J [company] did not fall into the Ibbotson definition of a small company.
- The IRS expert calculated a 15.5 percent cost of equity capital.
- He arrived at this using CAPM by adding a 7.46 percent risk-free rate of return and a 7.4 percent equity risk premium increased for a beta coefficient of 1.09. (7.46 + [7.4% × 1.09] = 15.5%)
- The Court accepted 15.5 percent as the cost of equity capital.
- The Court allowed a 14.4 percent WACC to be used.
- The Court believed that it was significant that the expert applied a "pretax" discount rate to pretax earnings, although it is not apparent from the opinion why the discount rate was considered "pretax."
- See discussion infra regarding tax-effecting S corporation earnings.

Estate of Desmond v. Commissioner[38]

- The taxpayer expert used CAPM.
- The IRS claimed that the higher betas in this industry compared to others was due to the potential environmental liabilities facing the subject company.
- The Court disagreed with this assertion based on a lack of evidence presented by the IRS at trial and concluded an additional discount was necessary for environmental liabilities under the income method.

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[37] *Walter L. Gross, Jr. et ux., et al. v. Commissioner,* T.C. Memo 1999-254 (July 29, 1999).
[38] *Estate of William J. Desmond v. Commissioner*, T.C. Memo 1999-76 (March 10, 1999).

Estate of Hendrickson v. Commissioner[39]

- For the cost of capital used in the DCF method, the IRS expert used the WACC and calculated the cost of equity capital using CAPM.
- To calculate beta, the IRS expert used only large multilocation publicly traded banks compared to the relatively small single-location subject.
- The IRS expert determined a beta of 1.
- The Court noted that the IRS expert had significant shortcomings in his application of CAPM.
- The Court expressed doubts over the appropriateness of CAPM in the valuation of small, closely held companies, especially those with little prospect of going public.
- The Court pointed out a number of the problems with applying CAPM, including the accuracy of beta.
- Further, the Court faulted the IRS expert for ignoring the small-stock risk premium as a crucial part of determining cost of capital.

Furman v. Commissioner[40]

- The IRS valuation engineer used CAPM and WACC.
- The Tax Court said:

> We do not believe that CAPM and WACC are the proper analytical tools to value a small, closely held corporation with little possibility of going public. CAPM is a financial model intended to explain the behavior of publicly traded securities that has been subjected to empirical validation using only historical data of the two largest U.S. stock markets. . . . Contrary to the assumptions of CAPM, the market for stock in a closely held corporation like FIC (the company) is not efficient, is subject to substantial transaction costs, and does not offer liquidity . . . . Because the calculation of beta requires historical pricing data, beta cannot be calculated for stock in a closely held corporation. The inability to calculate beta is a significant shortcoming in the use of CAPM to value a closely held corporation . . . .

Tax Effecting S Corporation Earnings

Gross v. Commissioner[41]

- The taxpayer expert tax-effected S corporation earnings in the income approach while the IRS expert did not.

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[39] *Estate of James Waldo Hendrickson v. Commissioner*, T.C. Memo 1999-278 (August 23, 1999).
[40] *Maude G. Furman et al. v. Commissioner*, T.C. Memo, 1998-157 (April 30, 1998).
[41] *Walter L. Gross Jr. et ux., et al. v. Commissioner*, T.C. Memo 1999-254 (July 29, 1999).

- The taxpayers introduced two IRS documents to support their approach: "A Valuation Guide for Income Estate and Gift Taxes" (the Guide) and "Examination Technique Handbook for Estate Tax Examiners" (the Handbook).
- One excerpt from the Guide noted "S corporations are treated similarly to partnerships for tax purposes. S Corporations lend themselves readily to valuation approaches comparable to those used in valuing closely held corporations. You need only to adjust the earnings from the business to reflect estimated corporate income taxes that would have been payable had the Subchapter S election not been made."
- The Court read the excerpt as "neither requiring tax effecting nor laying the basis for a claim of detrimental reliance."
- Further, the Court noted that the taxpayers "have failed to prove that they relied on either the Guide or the Handbook in any way" and the IRS was not estopped "from disregarding a fictitious tax when valuing an S Corporation."
- The taxpayer expert presented a list of costs or trade-offs shareholders incur because of electing S corporation status.
  - The first argument that the subject company might not make actual distributions sufficient to cover the shareholders' tax obligations was dismissed by the Court as an unreasonable assumption.
  - The second argument that the S corporation might lose its favorable tax status was similarly dismissed by the Court.
  - The final argument that S corporations have a disadvantage in raising capital was also dismissed since the Court believed this argument was appropriately addressed in the cost of capital rather than in the tax effecting of earnings.
- The Court concluded, "the principal benefit that shareholders expect from an S corporation election is a reduction in the total tax burden imposed on the enterprise. The owners expect to save money, and we see no reason why that savings ought to be ignored as a matter of course in valuing the S corporation."

Wall v. Commissioner[42]

- The Tax Court completely ignored the income approach calculation of both experts, citing the inability of the company to make projections.
- Even though this approach was ignored, the Tax Court's analysis made several comments about imputing income taxes to the earnings of an S corporation, saying that the tax-affected cash flow used by both appraisers was incorrect.
- The Court said, "Because this methodology attributes no value to Demco's S corporation status, we believe it is likely to result in an undervaluation of Demco's stock."

[42] *Wall v. Commissioner*, T.C. Memo 2001-75 (March 27, 2001).

Daubert Challenge

While it is not uncommon to challenge experts, *Gross v. Commissioner*[43] is the first and, so far, only Tax Court case to specifically discuss a *Daubert* challenge to a business valuation expert witness.

- The taxpayers filed a Motion in Limine to have the IRS expert's testimony excluded because:
  - It was derived from the application of scientifically unreliable methods.
  - Neither the expert's underlying data nor his empirical analysis had been published or submitted for peer review.
  - Part of the data used by the expert was not available in 1992 (the date of the gift) and, therefore, a willing and knowledgeable buyer and seller could not have relied on the expert's marketability analysis in arriving at fair market value.
- The Tax Court agreed that *Daubert v. Merrell Dow Pharm, Inc.*[44] and *Kumho Tire Co. v. Carmichael*[45] were applicable and the Court had a "gatekeeping role to perform."
- The Court concluded that the difference in opinions of the two experts in the cash flow approach was exclusively a difference as to the value of certain variables, not a difference in methodology, and that the taxpayers' argument was "nonsensical."
- Because the difference was just one of factual disagreement, the Court felt it unnecessary to address the taxpayers' second concern that the IRS expert's "method" had not been subjected to peer review.
- For the final concern about subsequent data being used in the marketability discount analysis, the IRS expert testified, "there is no reason to believe that the underlying economics of private placement would have changed after the valuation date." The Court noted that the expert performed an identical statistical analysis using only the data that were available at the valuation date and found a predicted marketability discount similar to the one using the complete data.
- The Court denied the motion.

Blockage Discounts

Blockage discounts arise in both tangible asset appraisals and business appraisals. In business appraisals, the discount is mostly for publicly traded stock where the sale of the subject shares in a short period of time could depress the public market. For real estate entities the discount arises from the dollar amount or other size factor of the properties appraised compared to the amount of similar properties in the relevant market.

Estate of Brocato v. Commissioner[46]

- The blockage discount was pertinent because all of the decedent's properties were in the same neighborhood.

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[43] *Walter L. Gross Jr. et ux., et al. v. Commissioner*, T.C. Memo 1999-254 (July 29, 1999).
[44] *Daubert v. Merrell Dow Pharm, Inc.,* 509 U.S. 579, 589 (1993).
[45] *Kumho Tire Co. v. Carmichael*, 526 U.S., 119 S. Ct 1167, 1171 (1999).
[46] *Estate of Brocato v. Commissioner*, T.C. Memo 1999-424 (December 29, 1999).

- The taxpayer and the IRS agreed that placing all of these properties on the market at once would depress prices.
- The IRS expert used a present value analysis and arrived at a 1.92 percent blockage discount.
- The taxpayer's expert arrived at a 12.5 percent blockage discount by looking at the number of properties listed in the area, the San Francisco economy, investor pessimism, earthquake concerns, the size of the taxpayer's properties, and the potential pool of investors.
- The Tax Court concluded an 11 percent blockage discount was appropriate.

Estate of Foote[47]

- The decedent owned 280,507 (2.2 percent of the total outstanding shares) of Applied Power, Inc., which traded on the New York Stock Exchange.
- As part of the original return, the estate claimed a 5.24 percent blockage discount without appraisal.
- In connection with an IRS examination, the estate obtained two appraisals, one claiming an 8 percent blockage discount and the other claiming 22.5 percent.
- The IRS appraiser opined that the market was free of abnormal factors and influences and that the trading prices for the Applied Power stock were representative of the stock's fair market value.
- The appraiser tabulated trading statistics for eight days where more than 50,000 shares were traded and compared the closing price with the previous day's close. He also noted that 240,000 of the 280,507 shares were sold within 90 days after death at prices that did not depress the previous day's trading prices for the stock.
- On rebuttal, the estate's expert argued against the use of the subsequent events.
- In the Court's ruling, the judge, while mindful of the general rule that only facts known on the valuation date should be considered, said, "Here, we believe the three sales . . . within 3½ months of the decedent's death to be relevant and reasonably proximate to the valuation date."
- The Tax Court allowed the 3.3 percent discount claimed by the IRS expert.

Fractional Interest Discounts

Fractional interest discounts primarily apply to undivided interests in real property. Readers are advised to consider the differences between community property states and equitable distribution states when considering this discount when the co-owners are married. While this topic is outside the realm of business valuation, we have presented a few representative cases for reference purposes because of the recent volume of cases on this topic.

Estate of Augusta Porter Forbes v. Commissioner[48]

- A QTIP trust owned a 42 percent interest in one property and a 42.9 percent interest in another.

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[47] *Estate of Dorothy B. Foote v. Commissioner*, T.C. Memo 1999-37 (February 5, 1999).
[48] *Estate of Augusta Porter Forbes v. Commissioner*, T.C. Memo 2001-72 (March 23, 2001).

- The original estate tax return claimed a 30 percent fractional interest discount.
- The first taxpayer expert was unable to find comparable sales for similar fractional interests but found that real estate brokers had applied fractional interest discounts of 10 to 30 percent in liquidation partnerships.
- Based on this information and considering possible intrafamily conflicts and other factors adversely affecting the marketability of the undivided interests, the expert concluded a 30 percent discount was appropriate.
- The second taxpayer expert determined that a 36 percent discount was appropriate utilizing the present value of annual income streams based on hypothetical partitions or forced sales of the properties under various scenarios.
  - The Tax Court was critical of this expert's approach, noting the present value calculations were inadequately explained, particularly the 14 percent equity discount rate he used.
- According to the Tax Court, the IRS expert "purported to use a comparable sales approach to determine an appropriate valuation discount." The appraiser used three "appropriate examples" that had fractional interest discounts ranging from 25 to 64 percent.
- The Court said that, with little explanation, the IRS appraiser concluded that based on the examples and "other market oriented research completed by this appraiser," the appropriate discount rate was 18 percent.
- The Tax Court concluded:

> We are unpersuaded that the "examples" on which [the appraiser] bases his comparable sales analysis actually represent comparable sales. Even if they did, we find no adequate justification for his selection of an 18-percent discount rate—a rate that is well below the smallest discount indicated by [the appraiser's] own "comparables." Consequently, we do not rely on [the expert's] report. See Rule 143(f)(1). We are unsatisfied that any of the parties' experts have adequately justified their recommended discount rates—a shortcoming that might be attributable in part to a lack of available empirical data. Given that the parties agree that some valuation discount is appropriate, however, and lacking any firm basis on which we might independently derive one, we accept [the taxpayer expert's] recommended 30-percent valuation discount as being the most reasonably justified of the opinions presented to us.

Estate of Rebecca A. Wineman v. Commissioner[49]

- The IRS expert examined sales of 21 partial interests and concluded that "an inverse relationship existed between the size of the pro rata interest and the amount of the adjustment." Smaller fractional interests would lead to larger discounts.
- He took a 10 percent discount for parcels in which the decedent owned 51 percent interests and a 15 percent discount for a parcel in which the decedent owned a 50 percent interest.

[49] *Estate of Rebecca A. Wineman v. Commissioner*, T.C. Memo 2000-193 (June 28, 2000).

- The Tax Court was critical of some of the comparable partial interest sales used by the IRS appraiser since these transactions resulted in the buyer owning 100 percent. The Court said, "A buyer consolidating all the fractional interests is likely to pay a premium for those interests. Such a sale does not indicate the appropriate discount applicable between the hypothetical willing buyer and willing seller for a partial interest."
- The taxpayer expert examined six sales of partial interests and concluded a 15 percent discount would be appropriate for the decedent's 50 percent and 51 percent interests and a 20 percent discount would be appropriate for a 25 percent interest.
- The Tax Court found this analysis "helpful," and allowed a 15 percent discount for the 50 percent and 51 percent owned parcels.

J. C. Shepherd v. Commissioner[50]

- The IRS argued that the discount for an undivided interest should be limited to the cost to partition.
- This argument was rejected by the Court, which noted that this approach failed to give adequate consideration to other factors, such as lack of control in managing and disposing of the property.
- The court allowed a 15 percent undivided interest discount.

Estate of William Busch v. Commissioner[51]

- The decedent owned a one-half interest in real estate.
- The decedent's appraiser discounted the value by 40 percent to account for the decedent's partial interest.
- The IRS appraiser valued the one-half interest with no discount for partial ownership.
- The Court allowed only a 10 percent discount based primarily on the cost to partition.

Reasonable Compensation

Reasonable compensation cases aren't strictly valuation cases, but many of the same financial tools are used. Often business appraisal experts are the primary expert witnesses in these cases where the independent investor test is used.

Wagner Construction, Inc. v. Commissioner[52]

The amounts at issue in this case are in the table in Exhibit 13.1. (The amounts argued by the IRS on brief were more than twice the amounts allowed by the IRS in its notice of deficiency.)

- In this case, the experts were rebuked by the Tax Court, which said:

[50] *J. C. Shepherd v. Commissioner*, 115 T.C. No. 30 (October 26, 2000).
[51] *Estate of William Busch v. Commissioner*, T.C. Memo 2000-3 (January 15, 2000).
[52] *Wagner Construction, Inc. v. Commissioner,* T.C. Memo 2001-160 (June 29, 2001).

Exhibit 13.1 Wagner Construction, Inc. v. Commissioner

Taxpayer

Year	Dennis	Curtis	Total
10/31/1995	$1,048,200	$246,688	$1,294,888
10/31/1995	699,192	400,573	1,099,765

Internal Revenue Service

Year	Dennis	Curtis	Total
10/31/1995	$ 243,000	$192,450	$ 435,450
10/31/1995	258,600	202,350	460,950

Tax Court

Year	Dennis	Curtis	Total
10/31/1995	$ 385,000	$250,000	$ 635,000
10/31/1995	385,000	250,000	635,000

> Because of fundamental differences in approach among the experts engaged by both parties, the values arrived at in the reports are extremely far apart. Although it is not unusual in valuation cases that two experts reach significantly different conclusions, the reports and testimony of the experts in this case are so dissimilar that the reliability of the experts is brought into question. In this case, the experts reached conclusions that patently favored their respective clients, and their reports were designed to support their conclusions.
>
> The purpose of expert testimony is to assist the trier of fact to understand evidence that will determine the fact in issue . . . . That purpose is jeopardized when an expert assumes the position of an advocate. An expert has a duty to the Court that exceeds his duty to his client; the expert is obligated to present data, analysis, and opinion with detached neutrality and without bias, regardless of the effect of such unbiased presentation on his client's case. When an expert displays an unyielding allegiance to the party who is paying his or her bill, we generally will disregard that testimony as untrustworthy . . . (when experts act as advocates, "the experts can be viewed only as hired guns of the side that retained them, and this not only disparages their professional status but precludes their assistance to the Court in reaching a proper and reasonably accurate conclusion"). The experts' lack of impartiality has caused a disservice to the Court and the system of tax administration. [Citations omitted.]

- The taxpayer's expert researched the proxy statements of public companies but found no comparable companies for compensation purposes.
- The expert then compared the taxpayer's compensation to various published compensation studies.

- Because of the duties of the taxpayer's two officers and their long work hours, and the management team size for the companies in the studies, the experts determined it would take four people to replace Dennis [officer].
- The Tax Court was critical of the assumption that Dennis's salary should be the total paid to four executives.
- The Court also found portions of the studies to be unreliable.
- The taxpayer expert's next approach was to calculate the taxpayer's "residual economic income after a fair return on the total fair market value of the stockholders' invested capital."
  - The analysis included a period of time during which this expert claimed the officers were undercompensated.
- The Tax Court said, "An executive has not been undercompensated simply because the stockholders received an excellent return that greatly exceeds a 'fair' return."
- The Court termed the use of a 10-year period for analysis "merely an attempt to justify payments in excess of the amount [the expert] could compute using his other methods."
- The first IRS expert used publicly traded companies finding 12 comparable companies.
- The Court found that this analysis had a "fatal flaw," saying "none of the 12 publicly traded companies he selected was reasonably comparable to petitioner. All of them were much larger than petitioner, particularly in terms of their respective annual sales."
- This expert also failed to account for stock options in the public companies and the Tax Court rejected this expert's opinion.
- The second IRS expert used published studies to determine reasonable compensation.
- The Court rejected this expert's opinion, saying "We find the report of [the expert] to be unreliable. The report contains several typographical and mathematical errors." This expert also failed to take into account the stock options granted in public companies.
- The Tax Court engaged in its own analysis of compensation reasonableness using nine factors that were used by the Court of Appeals for the Eighth Circuit, to which this case could be appealed. These factors are:

  1. The employee's qualifications
  2. The nature, extent, and scope of the employee's work
  3. The size and complexities of the business
  4. The prevailing general economic conditions
  5. The prevailing rates of compensation for comparable positions in comparable concerns
  6. The salary policy of the taxpayer as to all employees
  7. In the case of small corporations with a limited number of officers, the amount of compensation paid to the particular employee in previous years
  8. A comparison of salaries paid with the gross income and the net income
  9. Comparison of salaries with distributions to stockholders

- The Court concluded that an independent investor would not approve salaries in excess of $635,000 unless the investor was receiving a fair return on investment.

- Using the return on investment percent determined by the taxpayer expert, the Court calculated that salaries in excess of the $635,000 represented disguised dividends.

Metro Leasing and Development v. Commissioner[53]

- The Tax Court held that Metro Leasing and Development Corp. was entitled to deduct a portion of officer's compensation disallowed by the IRS, but that it accumulated retained earnings beyond the allowable amount.
- George Valente was the sole shareholder in Metro Leasing and Development Corp., an auto leasing and real estate development firm.
- Mr. Valente became ill, and he and his wife operated the firm under a "cooperative" arrangement.
- Metro Leasing deducted $240,000 and $460,000 in 1995 and 1996 as compensation to the couple.
- The IRS asserted that the company was only entitled to deduct $77,000 for each year as reasonable compensation under § 162(a).
- In addition, the IRS determined that Metro Leasing had allowed its earnings to accumulate beyond the reasonable needs of the business and was, therefore, subject to the accumulated earnings tax.
- The Tax Court sustained a part of the IRS position using the five-factor test in *Elliotts Inc. v. Commissioner,* 716 F.2d 1241 (9th Cir. 1983) and by applying the independent investor test.
- The Court found that income from the sale of assets during 1995 and 1996 was due to the Valentes' efforts and concluded that reasonable compensation for those years was $90,000 and $163,000.

Eberl's Claim Service, Inc. v. Commissioner[54]

- The Tenth Circuit affirmed a Tax Court opinion that held a corporation may deduct only a portion of the amounts paid to its shareholder/president as reasonable compensation.
- Kirk Eberl was president, director, and sole shareholder of Eberl's Claim Service Inc. (ECS), which was an independent claims adjuster for insurance companies.
- For 1992 and 1993, ECS deducted $4.3 million and $2 million, respectively, as Eberl's compensation.
- ECS had never declared a dividend.
- The IRS contended that reasonable compensation was $500,000 and $400,000 for 1992 and 1993 respectively, and the amounts paid in excess of this were disguised dividends.
- The Tax Court opined that because of Mr. Eberl's qualifications, high compensation was justifiable. However, the Court pointed out that:
  - ECS paid Eberl most of its income
  - Eberl's compensation agreement was not at arm's length
  - Other ECS employees did not share in the profits

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[53] *Metro Leasing and Development v. Commissioner*, T.C. Memo 2001-119 (May 18, 2001).
[54] *Eberl's Claim Service, Inc. v. Commissioner*, No. 99-9033, 2001 U.S. App. Lexis 8162, United States Court of Appeals for the Tenth Circuit.

- The Tax Court concluded that $2.3 million of the 1992 and $1 million of the 1993 compensation was reasonable.
- The Tenth Circuit reviewed the Tax Court's holding that some of the compensation was reasonable and applied the multifactor test of *Pepsi-Cola Bottling Co. v. Commissioner,* 528 F.2d 176 (10th Cir. 1976) to determine the reasonableness of compensation under § 162(a)(1).
- The Tenth Circuit also considered an argument raised by the taxpayer on appeal, that the court should use an "independent investor" test instead of a reasonableness test to determine a reasonable compensation. Although noting that it is much simpler than the multifactor approach, the Court concluded that absent en banc rehearing, it was bound to use the multifactor test.

Pediatric Surgical Associates v. Commissioner[55]

- This case concerns a medical practice employing both shareholder and nonshareholder surgeons.
- The case departs from those that discuss a financial analysis in determining reasonable compensation.
- The Tax Court noted that "We do not believe . . . that whether the return amounts were reasonable in amount is actually in question. The question framed by the parties' briefs is whether the remaining amounts [i.e., the disallowed amounts in question] were paid to the shareholder surgeons *purely for their services*" (emphasis added). Ultimately, the amounts received by the shareholder physicians that represented profits from services performed by nonshareholder physicians were classified as dividends and an accuracy penalty under § 6662 (a) was assessed.

Label Graphics v. Commissioner[56]

- The U.S Ninth Circuit Court of Appeals affirmed the U.S. Tax Court in *Label Graphics v. Commissioner,* T.C. Memo, 1998-343.
- The Tax Court had determined that the 1990 reasonable compensation for its president and sole stockholder, Lon Martin, was $406,000 ($156,000 salary and $250,000 bonus). On the original return, the company had claimed $878,913 as a compensation deduction, and the IRS had disputed all but $245,600 of the deduction. The Court applied the *Elliotts*[57] factors.
- The Ninth Circuit noted:

> In *Elliotts,* we set out five broad factors that are relevant to the reasonableness inquiry: (1) the employee's role in the company; (2) a comparison of the employee's salary with those paid by similar companies for similar services; (3) the character and condition of the company; (4) potential conflicts of interest; and (5) evidence of an internal inconsistency in a company's treatment of payments to employees. 716 F.2d at 1245-47. No single factor is decisive. Id. at 1245. When conducting the

[55] *Pediatric Surgical Associates v. Commissioner*, T.C. Memo 2001-81 (April 2, 2001).
[56] *Label Graphics v. Commissioner*, U.S. Ninth Circuit Court of Appeals, August 8, 2000.
[57] *Elliots v. Commissioner*, Ninth Circuit (1983).

> reasonableness inquiry, "it is helpful to consider the matter from the perspective of a hypothetical independent investor. A relevant inquiry is whether an inactive, independent investor would be willing to compensate the employee as he was compensated.

Normandie Metal Fabricators v. Commissioner[58]

- Exhibit 13.2 shows the compensation amounts claimed by the taxpayer, allowed by the IRS, and accepted by the Tax Court.
- The Tax Court noted:

> In *Rapco, Inc. v. Commissioner,* 85 F.3d 950, 954 (2d Cir. 1996), affg. T.C. Memo. 1995-128, the U.S. Court of Appeals for the Second Circuit, the court to which an appeal in this case would lie, stated five factors to be considered in assessing the reasonableness of an employee's compensation: (1) The employee's role in the taxpaying company, including the employee's position, hours worked, and duties performed; (2) potential conflicts of interest, such as the ability to "disguise" dividends as salary; (3) the employer's compensation policy for all employees; (4) the character and financial condition of the company; and (5) comparison of the employee's salary with those paid by similar companies for similar services. No single factor controls.

Exhibit 13.2 Normandie Metal Fabricators v. Commissioner

	1993		
	Taxpayer	**IRS**	**Tax Court**
Isodore Klein	$352,000	N/A	$200,000
Steven Klein	$500,400	N/A	$300,000
Total	$852,400	$405,250	$500,000
	1994		
	Taxpayer	**IRS**	**Tax Court**
Isodore Klein	$368,000	N/A	$200,000
Steven Klein	$450,400	N/A	$300,000
Total	$818,400	$392,157	$500,000
	1995		
	Taxpayer	**IRS**	**Tax Court**
Isodore Klein	—	N/A	—
Steven Klein	$820,400	N/A	$440,000
Total	$820,400	$451,284	$440,000

[58] *Normandie Metal Fabricators v. Commissioner*, T.C. Memo 2000-102 (March 27, 2000).

> These factors should be examined from the perspective of an independent investor. See 85 F.3d at 954-955; *Dexsil Corp. v. Commissioner*, 147 F.3d 96, 100 (2d Cir. 1998), vacating and remanding T.C. Memo 1995-135.

- The Tax Court upheld an accuracy related penalty for substantial understatement under section 6662 in 1993 and 1994 but did not uphold the penalty for 1995, the only year the taxpayer sought expert advice on the matter.
- In 1993 and 1994, the taxpayer did not rely on expert advice to arrive at a reasonable salary, but they did in 1995.

Law Offices—Richard Ashare, P.C. v. Commissioner[59]

- The taxpayer was a corporate law firm with one shareholder who was also the only professional employee.
- The firm had won a large lawsuit, resulting in the taxpayer being awarded $12,567,623 in legal fees.
- This case concerns $1,750,000 of compensation claimed for 1993. The taxpayer had previously been audited through 1992, with the results shown in Exhibit 13.3.

Exhibit 13.3 Richard Ashare, P.C. v. Commissioner

Year	Reported Compensation	Agreed Compensation	Constructive Dividend
1989	$ 2,151,666	$ 2,151,666	—
1990	$ 1,690,834	$ 1,563,447	$127,387
1991	$ 2,000,000	$ 1,947,042	$ 52,958
1992	$ 4,650,000	$ 4,602,596	$ 47,404
	$10,492,500	$10,264,751	$227,749

- The law firm had three directors, Mr. Ashare, his wife, Marlene, and his longtime tax advisor. The corporation's compensation policy was to pay to Mr. Ashare annually all legal fees received during the year less an amount equal to the sum of its corporate expenses plus any funds retained for future operations.
- In order to be deductible, compensation must be (1) reasonable in amount and (2) for service actually rendered to the payor in or before the year of payment. The Court said:

> We have no doubt that the $1,750,000 paid to Mr. Ashare meets the first test for deductibility; i.e., it is reasonable in amount as to the compensation that a personal service corporation such as petitioner could pay its key employee in a year for his services. Mr. Ashare's qualifications for his position with petitioner justify high compensation, as does the fact that he is vital and indispensable in petitioner's operation and success.

[59] *Law Offices—Richard Ashare, P.C. v. Commissioner*, T.C. Memo 199-282 (August 24, 1999).

Petitioner's business also is complex and highly specialized, and it demands a person of Mr. Ashare's expertise.

- The Court allowed the full $1,750,000 as reasonable compensation.

Dexsil Corporation v. Commissioner[60]

- This case is a remand from the Court of Appeals for the Second Circuit in *Dexsil Corp. v. Commissioner,* 147 F.3d 96 (2d Cir. 1998), vacating and remanding T.C. Memo 1995-135. The Second Circuit ordered the Tax Court to make specific findings regarding four questions:

  1. Whether a hypothetical investor would accept the compensation paid to [Theodore R.] Lynn;
     - The only evidence at trial relating to the rate of return acceptable to a hypothetical investor was the taxpayer expert's compilation of data on New York Stock Exchange companies. There was no evidence presented, however, that those companies were comparable to the taxpayer or that the average return of those companies would be satisfactory to a hypothetical investor in a company with the degree of risk associated with the taxpayer's business.
     - On remand, the taxpayer tried to compare the rate of return in this case to other cases in which the reasonableness of compensation paid to shareholder-officers of closely held companies was determined.
     - The Court concluded that a hypothetical independent investor would not accept the compensation as reasonable.
  2. Whether Lynn was paid according to a long-standing and consistently applied contingent compensation formula, and, if so, whether his salary was reasonable in light of this formula;
     - The taxpayer claimed a bonus formula existed, but the Tax Court noted that there was no testimony indicating when and how the formula was established. The testimony that was given was termed "vague" and "retrospective."
     - The Tax Court was not persuaded that the formula existed or was consistently applied.
  3. Whether Lynn's compensation compared favorably with the compensation paid by similar companies for comparable services, given the many roles Lynn played at Dexsil;
     - The taxpayer tried to add together the salaries for the Chief Executive Officer and the Chief Financial Officer for a comparable company and claim that based on Lynn's duties, he should be compared to the combined total. The Tax Court did not accept this argument.
  4. Whether, after reconsideration of these factors, the balance of factors has shifted in favor of Dexsil such that it has met its burden of proving that Lynn's compensation was reasonable.
     - On remand the taxpayer relied on the formula for the bonus as meeting their burden of proof. Since the Tax Court did not believe the formula existed, the burden of proof argument also failed.

[60] *Dexsil Corporation v. Commissioner*, T.C. Memo 1999-155 (May 5, 1999).

- In their opinion on remand, the Tax Court said:

> As we indicated in our prior memorandum opinion, the data compiled by respondent's expert showed that Lynn's compensation was more than four times the median CEO compensation for seven comparable companies during the years in issue. There was no evidence that Lynn's compensation for the years in issue was intended to compensate him for any past undercompensation. Petitioner's return on equity was declining during the years in issue, and the dividends paid were negligible in comparison to increased sales. We do not believe that the hypothetical independent investor, under these circumstances, would have approved hikes in Lynn's compensation of 32 percent ($98,660) and 30 percent ($111,460) during those years.

Herold Marketing Associates v. Commissioner[61]

- The IRS claimed that $700,000 of the $1 million in compensation paid by the taxpayer to its sole shareholder, sole board member, and chief executive officer was not deductible as reasonable compensation.
- The Court cited 14 factors to consider in reaching a conclusion on the reasonableness of compensation:

1. The employee's qualifications
2. The nature, extent, and scope of the employee's work
3. The size and complexities of the employer's business
4. A comparison of salaries paid with the employer's gross and net income
5. The prevailing general economic conditions
6. A comparison of salaries with distributions to officers and retained earnings
7. The prevailing rates of compensation for comparable positions in comparable concerns
8. The salary policy of the employer as to all employees
9. The amount of compensation paid to the particular employee in previous years
10. The employer's financial condition
11. Whether the employer and the employee dealt at arm's length
12. Whether the employee guaranteed the employer's debt
13. Whether the employer offered a pension plan or profit-sharing plan to its employees
14. Whether the employee was reimbursed by the employer for business expenses that the employee paid personally

- The Court presented a detailed analysis of these factors, including the CEO's "workaholic" predilection.
- The only expert testimony apparent in the opinion dealt with Item Seven—prevailing rates of compensation for comparable positions.
- The Court was not, however, persuaded by either expert.
- The taxpayer expert limited his analysis to companies identified in the IRS engineering report that was used by the IRS in their audit and concluded that the companies in this analysis were "reasonably comparable, not totally comparable."

[61] *Herold Marketing Associates v. Commissioner*, T.C. Memo 1999-26 (January 29, 1999).

- Unfortunately for the taxpayer, this expert was used to rebut a document the IRS did not introduce at trial as part of the record.
- The IRS expert was also criticized by the Court for not using companies that were sufficiently comparable.
- The judge was also skeptical of the sample size used, the number of non-responses to the survey conducted by the expert, and the way the expert considered blank answers to his survey questions as negative responses.
- After considering the items in the list, the Court concluded the total amount of compensation paid was reasonable and, therefore, deductible.

Conclusion

- The Tax Court is increasingly critical of experts who appear to be hired guns.
- The Tax Court wants the data relied on by experts in reaching their opinions to be related directly to the company being valued, particularly in the area of discounts for lack of marketability. This will continue to pose problems for appraisers. For example, in *Janda* the Tax Court criticized one expert for using general marketability studies instead of industry specific marketability studies (which do not exist). In the same case the Court criticized another expert for using the Quantitative Marketability Discount Model which utilizes other assumptions.
- The IRS has lost some key family limited partnership cases dealing with the formation of those partnerships. This leaves attacks on discounts for lack of control and marketability as the main concern on the value of these entities.
- Some Courts of Appeal cases (particularly the Ninth Circuit) have been critical of the Tax Court for not accepting either expert's analysis and arriving at their own conclusion without adequate analysis.

CIVIL CASES

Dissenting Shareholder and Oppression Cases

"Fair value" cases constitute a growing body of law. These cases result from oppression or dissenters' rights cases. The definition of fair value differs between jurisdictions and even changes in the same jurisdiction particularly as it relates to discounts. For example, in *Hansen v. 75 Ranch Company*[62] discussed infra, the Montana Supreme Court disallowed a minority discount despite the fact that the immediately prior case on the same topic allowed a minority discount. Readers are advised to consult current law in the controlling jurisdiction. The following analysis is designed to give a cursory sense of the main issues using recent cases on the topic.

Hayes v. Olmsted & Assoc., Inc.[63]

- Oregon case.
- Plaintiff claimed oppression.
- Valued under a rule of thumb.

[62] *Hansen v. 75 Ranch Company*, No. DV-95-23 (MT 14th Judicial District, Musselshell County, February 1, 1999).
[63] *Hayes v. Olmsted & Assoc., Inc.*, 173 Or. App. 259, 2001 Or. App. Lexis 404 (Or. Ct. App. Mar. 28, 2001).

- No weight given to price for prior stock redemptions.
- No discounts for lack or control or lack of marketability.

Swope v. Siegel-Robert, Inc.[64]

- Missouri case appealed to Eighth Circuit.
- District Court had ruled that shares did not require a discount for lack of marketability.
- District Court had held that shares required a discount for lack of marketability.
- Eighth Circuit concluded that no discounts should apply.

First Western Bank Wall v. Olsen[65]

- South Dakota case.
- Majority shareholder of the bank amended the Articles of Incorporation to provide a reverse stock split that reduced the minority shareholder to .88 shares.
- The minority shareholders submitted their shares for redemption following the company's fair value estimate of the shares and then filed a written demand for a deficiency payment.
- Unable to reach a settlement, the company petitioned the circuit court to determine the value of the minority shares.
- The bank argued that the minority shareholder expert's testimony was irrelevant and unreliable because it "was speculative, not based on reliable foundations, and contradictory within its own definitions, and thus would be of no aid to the finder of fact in determining just compensation in this case."
- The Court did not agree.
- The appeals court upheld the lack of marketability discount.
- No discount was allowed for lack of control.

Hollis v. Hill[66]

- This is an appeal to the Fifth Circuit from the United States District Court for the Southern District of Texas.
- The shareholder sought to overrule the District Court's ruling that he should buy out the other shareholder's 50 percent interest.
- The District Court ordered one shareholder to purchase the other's shares and pay his attorney and expert fees.
- The purchasing shareholder appealed this decision.
- Both parties argued over the relevance of Hollis being an "equal" versus a "minority" shareholder.
- The Fifth Circuit found "this distinction immaterial to the present dispute."
- The Court acknowledged that there was a true minority shareholder in Clark, but that was an "insignificant" difference "in light of one shareholder's virtually unfettered control of FFUSA [Company] . . . [and that] a fiduciary duty exists

[64] *Swope v. Siegel-Robert, Inc.*, 2001 U.S. App. Lexis 2760 (February 26, 2001).
[65] *First Western Bank Wall v. Olsen,* 2001 S.D. Lexis 16; 621 N.W.2d 611 (January 31, 2001).
[66] *Hollis v. Hill*, 232 F.3d 460 (November 17, 2000).

between shareholders by virtue of the fact that one of the shareholders has control over the corporation's assets."
- The Court affirmed the lower court's holding about breach of fiduciary duty. It overruled the decision to use February 1998 as the valuation buy-out date and remanded the decision to the District Court to reconsider the valuation.

Blitch v. The Peoples Bank[67]

- Georgia case.
- The minority shareholder owned 5.5 percent of the outstanding stock of a bank corporation.
- A holding company owned the remaining shares.
- The bank corporation merged with another corporation owned by the holding company, and the minority shareholder dissented.
- The bank filed an appraisal action to determine the fair value of the minority stock.
- The expert for the bank applied both minority and marketability discounts in his calculations.
- The expert for the minority shareholder did not apply any minority or marketability discounts.
- The Court generally accepted the calculations of the bank's expert and accepted both minority and marketability discounts.
- The minority shareholder appealed, claiming the Court's application of discounts in determining the fair value of his stock was incorrect.
- The Court of Appeals reversed the trial court, holding that minority and marketability discounts should not be applied in determining the fair value of a dissenting stockholder's shares, and remanded the case for a new fair value determination.

English v. Artromick[68]

- This is the appeal of a trial court decision that determined the "fair cash value" of a minority interest.
- The majority shareholders decided that they wanted to sell the corporate assets or merge the business and began to investigate opportunities.
- The corporation hired a firm to appraise the stock and find purchasers.
- The corporation made an offer to the minority shareholder in preparation for a merger candidate.
- The minority shareholder refused the offer and filed an appraisal action for determination of fair value.
- At trial, the appraiser for the minority shareholder did not apply any discounts.
- The corporation's expert determined "fair cash value," applying a 50 percent minority discount and 40 percent marketability discount.
- The Court accepted the corporation's appraisal and rejected the appraisal of the minority expert because he failed to apply a minority or marketability discount.
- The minority shareholder appealed.

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[67] *Blitch v. The Peoples Bank*, 2000 Ga. App. Lexis 1265 (October 23, 2000).
[68] *English v. Artromick*, 2000 Ohio App. Lexis 3580 (August 10, 2000).

- The Court of Appeals of Ohio upheld the trial Court's ruling because it was supported by competent evidence in the record.
- To review the application of minority and marketability discounts, the Court of Appeals looked to prior case law that defined the term "fair cash value" as used in the Ohio dissenter's rights statute.
- Fair cash value is defined as "the amount a willing seller, under no compulsion to sell, would be willing to accept, and a willing buyer, under no compulsion to purchase, would be willing to pay for a share of stock of the corporation to be merged."
- This definition supported the corporation's expert distinguishing "fair value" from "fair cash value" in Ohio.

Hansen v. 75 Ranch Company[69]

- This was a remand from the Montana Supreme Court.
- The controlling shareholder of 75 Ranch Company exchanged the company's major asset, a Montana ranch, for an Arizona ranch in a section 1031 transaction.
- The controlling stockholder did not provide the minority shareholders with adequate notice of the proposed exchange, "a failure to substantially comply with the applicable statute."
- There was no shareholder vote for the transaction.
- A major issue on the appeal to the Montana Supreme Court was whether the stockholder agreement applied or the exchange transaction gave rise to dissenters' rights governed by the Montana Business Corporation Act.
- The Supreme Court found that the minority shareholders were entitled to statutory notice of their dissenters' rights.
- The Court also prohibited the use of minority and marketability discounts, which had been allowed in the initial trial.
- The Court said, "Because we have determined that the Montana Business Corporation Act controls, we further conclude that the Minority Shareholders are entitled to 'fair value' in accordance with the statutes, rather than 'fair market value' as provided in the Stockholder Agreement."
- In arriving at the conclusions that no discounts should apply, the Montana Supreme Court overruled its own decision in a 1996 shareholder oppression suit.
- On remand, the District Court heard supplemental testimony and rejected the use of the income approach as speculative, relying solely on the net asset approach.
- No reduction in value was allowed for the "built-in gains tax."

[69] *Hansen v. 75 Ranch Company*; No. DV-95-23 (MT 14th Judicial District, Musselshell County, February 1, 1999).

CHAPTER 14

Shareholder Disputes

The valuation analyst must know and understand the nuances and subtleties associated with valuations being performed for a specific purpose. In the shareholder dispute arena, the analyst must begin with an understanding of the various actions that cause these types of suits. In addition, the analyst must understand the statutes and case law in this area, as these factors often control how the assignment is performed. These factors include the appropriate standard of value, the use of the various appraisal methodologies, and the appropriateness of valuation adjustments (discounts and premiums).

ValTip

State statutes and judicial precedent control this area of valuation. Although analysts should not be acting as attorneys, it is important that they become generally familiar with the statutes and case law in the jurisdiction in which the lawsuit has been filed.

In some jurisdictions, there may not be relevant case law, in which case the valuation analyst should speak with legal counsel regarding the appropriate case law guidance for that particular matter.[1]

This chapter discusses the various issues that arise in stockholder dispute actions, particularly those lawsuits that are filed by minority shareholders who believe that they have been treated unfairly.

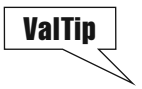
HISTORY OF SHAREHOLDER DISPUTES

Prior to the twentieth century, most states' common law required a unanimous vote for significant corporate actions. As a result, there was no need for state statutes that protected minority shareholders, as their votes could control a corporate action. Over time, states began to change their statutes and provided companies with the

[1] Those states that do not have case law in this area often look to other states whose statutes are similar. The attorney working on the case should be able to provide the valuation analyst with the appropriate case law for the jurisdiction that the case was originated in.

ability to go forward with significant corporate transactions based on a majority vote. As a result, states began to adopt statutes that provided protection for the minority shareholders. Most states have adopted the Revised Model Business Corporation Act. This act includes a definition of fair value, which is the statutory standard of value used in these types of actions. The act defines fair value as "The value of the shares immediately before the effectuation of the corporate action to which the dissenter objects, excluding any appreciation or depreciation in anticipation of the corporate action unless exclusion would be inequitable."[2]

CAUSES OF ACTION



Shareholder dispute cases typically arise under two different state statutes, dissenting shareholder actions and minority oppression (dissolution) actions.

All states have dissenting shareholder statutes. These actions arise when a minority shareholder believes that a proposed action of the corporation (known as a triggering event) will adversely affect him or her. Under state statute, the minority shareholder must "perfect" the action by performing specific steps as laid out in the statute. In New Jersey, for example,[3] the shareholder must take two steps:

1. Before the vote on the triggering event, the minority shareholder must notify the company that if the proposed event is approved, he or she will ask the company to purchase his or her shares.
2. Next, within 20 days of the date the company mailed notices to each shareholder advising that the proposed event was approved, the minority shareholder must make a written demand for payment (N.J.S.A. § 14A: 11-2). When written demand is made, the minority shareholder becomes a "dissenting shareholder" and forfeits all shareholder rights, except the right to be paid the fair value of his or her shares (N.J.S.A. § 14A: 11-3[2]).[4]

Following the shareholder's demand, the company must then take certain steps as defined by statute, including the provision of financial statements. The company may also make an offer to buy the dissenting shareholder's shares at fair value at this time. If no agreement is reached as to fair value, the dissenting shareholder will file an action to determine fair value. This is known as the stockholder's appraisal right or appraisal remedy.

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[2] Model Business Corporation Act, Section 13.03(3) (1998).

[3] Although there are variations in the states' statutes, New Jersey's statutes are typical of many other states as it relates to dissenting shareholder issues.

[4] Jay E. Fishman, Shannon P. Pratt et al., *Guide to Business Valuation*, 11th ed. (Fort Worth, TX: Practitioners Publishing Co., 2001), ¶ 1501.11.

Each state statute lists specific triggering events. These events include all or some of the following: merger, sale, exchange or other disposition of all or some of the company's stock, and, in some cases, the disposition of some or all of the company's assets.

An oppressed shareholder dispute resembles a "corporate divorce." These types of actions generally are triggered when a minority shareholder in a closely held company has expectations that are not met. In these instances, the minority shareholder "seeks a remedy for the majority shareholder's fraud, illegality, mismanagement, oppression, or similar reasons."[5]

Although a handful of states (Hawaii, Kansas, Nevada, Oklahoma) have not enacted judicial dissolution statutes, most have. In many of the statutes, the minority shareholder must prove oppression, fraud, illegality, or mismanagement before the Court orders a remedy. The most common remedy is the buyout of the minority shareholder's stock at fair value. This remedy provides a market for the minority shareholder's stock. In addition, "It accomplishes two purposes: It (1) provides the minority shareholder with a fair return on his or her investment while (2) alleviating the continuation of a forced association no longer desired by antagonistic parties. Thus, it benefits the individual owners and the corporation itself."[6]

In general, the remedy in a dissenting shareholder case is for the minority shareholder to be bought out. In an oppression case, however, there are three possible remedies available:

1. Requiring the company to purchase the shares, which is the most common remedy
2, Requiring the company to be liquidated and the proceeds equitably distributed
3. Finding there has been no oppression and maintaining status quo[7]

However, judges are often given wide latitude. In one case the Court allowed the minority shareholder to buy out the controlling shareholders.[8]

STANDARD OF VALUE

To proceed with any valuation assignment, the analyst must clearly define and understand the appropriate standard of value, and apply it properly.

In both dissenting and oppressed shareholder disputes, the statutes are clear—the standard of value is *fair value* in almost all states.

[5] Anne E. Singer and Jay Fishman, "Fair Value for Oppressed and Dissenting Shareholders," in *Advanced Business Valuation*, Robert Reilly and Robert Schweihs, eds. (New York: McGraw-Hill, 1999), p. 299.
[6] *Ibid*., p. 300.
[7] Fishman, Pratt et. al., *Guide to Business Valuation*, ¶1501.18.
[8] Internal Revenue Service's *Muellenberg v. Bikon Corp*., 143 NJ 168, 183, 669 A.2d 1382 (1996).

Judicial precedent also agrees on this issue. As previously mentioned, in most jurisdictions fair value is defined as in the Revised Model Business Corporation Act as "the value of the shares immediately before the effectuation of the corporate action to which the dissenter objects, excluding any appreciation or depreciation in anticipation of the corporate action unless exclusion would be inequitable."[9]

Some jurisdictions have varied this definition by excluding the phrase "unless exclusion would be inequitable." Other jurisdictions have included the consideration of "all relevant factors." Finally, some statutes use different terminology, such as "fair cash value," and "value."

Although the definition of fair value leaves the interpretation of its meaning open, the judicial interpretation of this definition indicates that fair value is not fair market value, which is defined as "the amount at which the property would change hands between a willing buyer and a willing seller when the former is not under compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts."[10]

Exhibit 14.1 illustrates the differences between the two standards of value.

In *Financial Valuation: Businesses and Business Interests*, under standard of value, the author indicates:

Exhibit 14.1 Differences Between Fair Market Value and Fair Value[11]

Fair Market Value	Fair Value
1. Willing buyer	1. *Not always a* willing buyer
2. Willing seller	2. *Not* a willing seller
3. Neither under compulsion	3. Buyer *not always* compelled; seller *under compulsion*
4. Assumes a typical *hypothetical* buyer and seller	4. The impact of the proposed transaction not considered; the concept of *fairness to the seller a possible consideration*
5. A *price equitable to both*	5. A concept of '"fairness" *to the seller,* considering the inability to keep the stock
6. Assumes both buyer and seller have *equal knowledge*	6. No *such assumption*
7. Assumes *reasonable knowledge* of both parties	7. No *such assumption*
8. Applicable to *controlling interests or minority blocks*	8. Applicable to *minority* blocks
9. Applies to *all federal tax valuations*	9. The most common value standard in *state dissenting and oppressed shareholder statutes*

[9] Model Business Corporation Act.

[10] Revenue Ruling 59-60.

[11] Source: Gary R. Trugman, *Understanding Business Valuation: A Practical Guide to Valuing Small to Medium-Sized Businesses* (New York: American Institute of Certified Public Accountants, 2002). Reprinted with permission, copyright © 1998 by American Institute of Certified Public Accountants, Inc.

> Although there is no precise legal definition of the term fair value, current jurisprudence suggests that fair value is *not* fair market value. In essence, "fair value" appears to be a legal concept separate and distinct from "fair market value," which is an appraisal concept.
>
> In order to better understand the subtle distinctions between fair value and fair market value, a review of the definition of fair market value is in order. The IRS's Revenue Ruling 59-60 defines fair market value as "the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts." Further, the word "fair" in fair *market* value modifies the word market, perhaps implying an open and active market. On the other hand, the word "fair" in fair value modifies the word value, perhaps suggesting a just and equitable value.[12]

The Delaware Supreme Court in its attempt to define fair value stated that it "measures 'that which has been taken from [the shareholder], *viz.,* his proportionate interest in a going concern."[13]

As previously stated, this area of valuation is driven by state statute and judicial interpretation. Therefore, the valuation analyst must be prepared to perform the appraisal in conjunction with these guidelines.

ValTip

Not only is the standard of value important in determining the methodology that will be performed and the discounts and premiums that will or will not be applied, but the courts have also shown that they do not equate fair value and fair market value.

In the *Matter of Slant/Fin. Corp. v. the Chicago Corp.*, a New York Court stated:

> Because the petitioner's expert . . . in its valuation report (on title page) and on 15 occasions refers to its valuation to be based on Fair Market Value, and the Business Corporation Law only uses the term Fair Value . . . the Court considers it a threshold question as to whether Fair Value and Fair Market Value are synonymous.

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[12] James H. Zukin, ed. *Financial Valuation: Businesses and Business Interests* (New York: Maxwell Macmillan Professional and Business Reference Division of Macmillan Information Company, Inc., 1990), pp. 9–37.

[13] From the *Matter of Shell Oil Co.*, 607 A.2d 1213, 1218 (Del. 1992), quoting *Tri-Continental Corp. v. Battye*, 74 A.2d 71, 72 (Del. 1950). See footnote 5, pp. 300–301.

> The Standard upon which [the company's expert's] valuation was based was Market Value . . . the statutory standard is much broader . . . The Court may give no weight to market value if the facts of the case so require.[14]

In fact, the Court rejected the report that was based on fair market value.

In another case, *LeBeau v. M.G. Bancorporation, Inc.*,[15] "the investment banker had issued a fairness opinion on a squeeze-out merger based on fair market value rather than on fair value. The Delaware Court of Chancery stated that this was 'legally flawed' as evidence regarding fair value."[16] The Court stated, "No weight was given to that opinion in the appraisal, as [the expert] had determined only the 'fair market value' of MGB's minority shares rather than their pro rata share of enterprise value."

These are two examples of the importance of understanding and utilizing the proper standard of value when preparing reports for dissenting and oppressed shareholder disputes. As stated in one valuation treatise:

> When appraising the fair value of a block of stock for a dissenting shareholder dispute, it is recommended that the appraiser consider the legal precedents for the applicable jurisdiction. Also, the opinion of counsel should be obtained regarding the interpretation of fair value in the jurisdiction in which the case originates. *One should not assume that there is a clear and concise conceptual definition of fair value*. [Emphasis added.][17]

VALUATION DATE

ValTip

When preparing a fair value analysis, the valuation analyst should consult the attorney on the engagement who will consider the state statute and case law to establish the valuation date.

In general, in dissenting shareholder lawsuits, the value is determined as of the day before the shareholders' meeting where the transaction being dissented from was proposed. In this way, the value is derived without the effects (either

[14] *Matter of Slant/Fin. Corp. v. The Chicago Corp.* (NY Sup. Ct. Oct. 5, 1995), *aff'd* 236 A.D.2d 547, 654 N.Y.S.2d 627 (NY App. Div. Feb. 18, 1997).

[15] *LeBeau v. M.G. Bancorporation, Inc.*, No. Civ. A. 13414, 1998 WL 44993 (Del. Ch. Jan. 29, 1998).

[16] Shannon P. Pratt, Robert F. Reilly, and Robert P. Schweihs, *Valuing a Business*, 4th ed. (New York: McGraw-Hill, 2000), p. 801.

[17] Richard C. May and Loren B. Garruto, eds. *Financial Valuation: Businesses and Business Interests*, 2000 Update (New York: Warren, Gorham & Lamont, 2000), p. U9A-7.

positive or negative) of the transaction, and the stockholder does not benefit or suffer the results of the proposed transaction. This does not mean that the appraiser ignores the future in determining value; it just means that the appraiser ignores the effects of the proposed transaction (merger, acquisition, etc.). In an oppressed shareholder case, the date of the valuation is usually the date of the filing of the complaint.

As in a fair market value appraisal, the valuation analyst should be considering those facts that were "known or knowable" as of the valuation date. Therefore, the selection of the valuation date is important, so that the appraiser can determine what information can be utilized in the analysis and preparation of the report.

ENTIRE FAIRNESS

As previously discussed, fair value cases arise because minority shareholders disagree with a company's actions or a company's management, and the result is generally the purchase of the minority shareholder's stock at fair value. In theory, fair value is supposed to be "fair" to both parties, and some courts look at a concept known as "entire fairness," which requires not only a "fair" price but also a fair procedure in determining that price.

In essence, what the courts are looking for is the fair treatment of the minority shareholders from the beginning of the process, such as having a valuation performed for the company, independent of the controlling interests. Although the usual remedy in a fair value case is the purchase of the minority shareholder's stock, if a court determines that "entire fairness" was lacking, judges have awarded greater amounts to compensate for the lack of fairness exhibited.

In the case of *Ryan v. Tad's Enterprises, Inc.*, Vice Chancellor Jacobs stated:

> The absence of any adequate independent representative for the minority shareholders, and of any arm's length negotiation over the Merger terms, precludes a finding that the merger was a product of fair dealing . . . [The defendants'] desire to minimize transaction costs . . . cannot relieve the corporate fiduciaries from their duty to assure that the interests of minority shareholders in a self-dealing transaction are adequately protected . . . . The defendants . . . are liable to the plaintiffs for breaching their fiduciary duty of loyalty. The question then becomes: what is the extent of that liability? . . . *The measure of damages for breach of fiduciary duty is not limited to the corporation's fair value as determined in an appraisal.*[18] [Citations omitted, emphasis added.]

Although this is a legal issue rather than a valuation issue, it is imperative that analysts remember that they are advocates for their opinion only. Although the analysts may be working for one side or the other, they must remember to remain objective and independent with respect to the client, so as not to be perceived as a hired gun and not be the cause of the Court determining a lack of fairness in the valuation.

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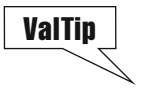
[18] *Ryan v. Tad's Enterprises, Inc.,* 709 A.2d 682, 693, 697 (Del.Ch., 1996), as quoted in an article by Shannon P. Pratt, "Shareholder Suit Valuation Criteria Vary from State to State," *Valuation Strategies,* Vol. 2, No. 3 (January/February 1999), p. 14.

In one decision, the judge stated:

> Typically both sides in an appraisal proceeding present expert opinions on the fair value of the petitioner's shares. In theory, these opinions facilitate judicial fact finding and conclusions by wrapping the experts' factual assumptions in complicated financial models with which they, and usually not the court, are conversant. One might expect the experts' desire to convince the Court of the reasonableness and validity of their assumptions and financial models would produce a somewhat narrow range of values, clearly and concisely supported, despite the individual parties' obvious conflicting incentives. Unfortunately, as this case and other cases most decidedly illustrate, one should not put much faith in that expectation, at least when faced with appraisal experts in this Court.
>
> This clear tendency of experts to provide an extreme value most favorable for their client encourages disagreement in every area of the proceeding. Weighing of these numerous minor areas of conflict, and not necessarily the interpretation of financial models, is perhaps the best reason for this Court to consider appointing an independent expert to sort through the clutter submitted.[19]

The judge continued to make other comments regarding the experts that clearly showed his displeasure in their "hired gun" valuations. Despite this, the judge took both reports into consideration. He accepted certain portions of each analyst's analysis and determined his own conclusion of value.



Courts look to the valuation analyst to provide a well-reasoned, objective valuation to aid them in their findings. To do so requires that analysts maintain their objectivity and independence.

VALUATION METHODOLOGY

Since many large U.S. corporations are incorporated in the State of Delaware, much of the judicial precedent in dissenting shareholder suits comes out of the Delaware Chancery courts. Prior to 1983, the methodology that was ordinarily applied in these cases was known as the Delaware Block Method. It utilized various methods that resulted in three values: investment value, market value, and asset value. Once these values were derived, mathematical weightings were assigned to each value,

[19] *MPM Enterprises, Inc. v. Gilbert*, No. 14416, 709 A.2d 663; 1997 Del. Ch. Lexis 141 (September 29, 1997).

and a weighted average was calculated to determine the final value. The weightings for a category could be zero, resulting in a final value that might be based on one or two of the three rather than on some average of the three values.

The definitions of value utilized in the Delaware Block Method were different from the definitions of value utilized in business valuation today. Investment value was a value derived from earnings or dividends, and the capitalization and discount rates used could be derived from the build up or capital asset pricing model or from market approach methods. Essentially, investment value was derived from a combination of what is currently known as the income and market approach methods. Market value under the Delaware Block Method was derived from prior transactions in the company's own stock. Asset value was based on the current value of the company's assets.

In 1983 the Delaware Supreme Court decided the case of *Weinberger v. UOP, Inc.*[20] In this case, the Court ruled that the Delaware Block Method alone was not sufficient; instead "all relevant factors" should be considered. The Court ruled that the Delaware Block Method was "clearly outmoded" because other valuation methods were being utilized in the financial community that were not considered in the method. This case did not eliminate the use of the Delaware Block Method; rather it provided the analyst with the ability to use additional methodologies as well; in this particular case, the discounted cash flow method.

ValTip

Currently, the three approaches to value—market, income and asset—are all acceptable in the shareholder dispute arena, although it is important to confer with the attorney in the particular jurisdiction. Methodologies (or preferred methods) vary from one jurisdiction to the other.

The courts will accept the use of various methodologies in fair value cases. However, like the Tax Courts, they look for proper utilization of the methodologies and will disregard a method if it is determined that it was not applied properly.

The Delaware Chancery Court has stated that the discounted cash flow method is "increasingly the model of choice for valuations in this Court."[21] Although different courts accept different methodologies, many states look to the Delaware courts for guidance. Therefore, it would not be surprising to find other courts accepting the discounted cash flow model in these types of cases in the future.

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[20] *Weinberger v. UOP, Inc.*, 457 A.2d 701 (Del. 1983).

[21] *Charles L. Grimes v. Vitalink Communications Corporation*, No. C.A. 12334, 1997 WL 538676 (Del. Ch. Aug 28, 1997), *aff'd* No. 425, 1997 (Del. Apr. 1, 1998).

ValTip

Various courts interpret the methodologies differently and refer to commonly known methods by other names.

For this reason, it is wise for analysts to become generally familiar with case law as well. For example, one court defined asset value as a market multiple times book value, which most analysts would consider to be a market-derived value. If an analyst were going to provide expert testimony in that jurisdiction, it would be helpful to understand the knowledge and direction of the court to help make a more persuasive and convincing argument.

VALUATION ADJUSTMENTS

When a valuation analyst is retained to determine the fair market value of a subject interest, conventional wisdom would have the analyst apply appropriate discounts and premiums. In these valuations, the question is not whether the discount or premium be applied; the question becomes how large or small should the discount or premium be.

Although these questions arise in fair value analysis, there is much less consensus among attorneys as to the answers. As previously explained, although fair value is defined in the state statutes, there is no clear-cut explanation of how to apply this definition to individual facts and circumstances. As a result, the analyst, along with the attorney, might consider applicable case law for guidance. Treatments vary from one state to another. Some states:

- Disallow both the discount for lack of control and the discount for lack of marketability
- Allow both the discount for lack of control and the discount for lack of marketability
- Allow a discount for lack of control but no discount for lack of marketability
- Allowance of a discount for lack of marketability but not a discount for lack of control

As if this is not confusing enough, some states have decided that the applicability of discounts should be decided on a case-by-case basis. As a result, these states have conflicting judicial decisions. Although the issue of control premiums does not arise often, there is case law on the subject, and some states have allowed control premiums in certain circumstances.

It cannot be reiterated enough how important the general understanding of the appropriate case law is when practicing in this arena. In some instances what appears to be conflicting case law is, in fact, not. The next excerpt discusses two cases handed down by the New Jersey Supreme Court in July 1999. At first glance, it appears that the court contradicted itself . . . but read on.

> In July 1999, the Supreme Court of New Jersey ruled on two fair value cases. One of these cases was filed as a dissenting shareholder action,

while the other was filed under the New Jersey Oppressed Shareholder Statute. Although there were several issues on appeal in each case, the commonality between them was the issue of a Discount for Lack of Marketability (DLOM). These cases highlight the differences that can arise under the same standard of value.

The *Lawson Mardon Wheaton, Inc. v. Smith* (A-63/64-98) case deals with a family owned business. After a number of shares of this family-owned business were sold or conditionally sold to a British company, the Board of Directors approved a plan to restructure the corporation. The reason for this restructuring was to keep the stock in the family by restricting future public sales of the company's stock. When the plan was approved in 1991, those stockholders who did not approve were notified of their right to demand payment of the fair value of their shares under N.J.S.A. 14A:11-1 to -11, also known as The Appraisal Statute. Twenty-six shareholders owning approximately 15 percent of the shares dissented and demanded payment for their shares. The corporation offered $41.50 per share, which included the deduction of a 25 percent DLOM. This discount was based on the belief that there was a limited market of potential buyers for this stock. When the dissenters rejected this offer, this action was instituted.

Both the trial court and the appellate court determined the price of the stock after considering a DLOM finding that there were extraordinary circumstances in this situation which gave rise to the applicability of this discount. The Supreme Court disagreed.

The Supreme Court's opinion stresses the nature of the term fair value, and states "courts must take fairness and equity in account in deciding to apply a discount to the value of the dissenting shareholders' stock in an appraisal action." The Court goes on to say:

> Indeed, equitable considerations have led the majority of states and commentators to conclude that marketability and minority discounts should not be applied when determining fair value of dissenting shareholders' stock in an appraisal action. Although there is no clear consensus, the use of a *fair value* standard, combined with application of equitable principles, has resulted in a majority of jurisdictions holding that a dissenting shareholder is entitled to her proportional share of the fair market value of the corporation. The value of the shares will not be discounted on the ground that the shares are a minority interest or on the related grounds of a lack of liquidity or marketability.

In addressing the issue of extraordinary circumstances, the Supreme Court disagreed with the lower courts. According to the decision, extraordinary circumstances exist when a dissenting shareholder holds out in order to benefit him- or herself by doing so. In this case, the Court felt that disagreeing (dissenting) to a corporate change was not extraordinary, but rather an ordinary business matter.

In light of the issue of fairness and the fact that extraordinary circumstances did not appear to exist, the Supreme Court overturned the

lower courts on these issues and held that a discount for lack of marketability was not applicable in this case.

On the same date, the Court ruled in the opposite direction in *Emanuel Balsamides, Sr. et. al. v. Protameen Chemicals, Inc. et. al.* (A-27-1998), which was an action brought under the New Jersey Oppressed Shareholder Statute (N.J.S.A. 14A: 12-7).

In this case, Messrs. Balsamides and Perle were equal partners in a manufacturing business. After many years of jointly running the business, the partners began having trouble working together. Over a number of years, this relationship deteriorated. Mr. Balsamides sought relief as an oppressed shareholder. Under this statute, if the Court finds the plaintiff to be oppressed, the Court "may appoint a custodian, appoint a provisional director, order a sale of the corporations stock [as provided below], or enter a judgement dissolving the corporation. . . ." After a 19-day trial, the Court found that Mr. Balsamides was oppressed, that Mr. Perle had conducted himself in such a way as to harm the business, and concluded that Mr. Balsamides should purchase Mr. Perle's share of the business. The trial court determined the purchase price of these shares of stock after the deduction of a 35 percent DLOM.

The case was appealed to the appellate division, which overturned the trial court's decision relating to this discount. The appellate court "concluded that such a discount was not appropriate in this case because there was no sale of Perle's stock to the public, nor was Balsamides buying an interest that might result in the later sale of that interest to the public."

The case was then appealed to the Supreme Court, which overturned the appellate division on the issue of the discount for lack of marketability. The decision stated:

> The position of the Appellate Division ignores the reality that Balsamides is buying a company that will remain illiquid because it is not publicly traded and public information about it is not widely disseminated. Protameen will continue to have a small base of available purchasers. If it is resold in the future, Balsamides will receive a lower purchase price because of the company's closely held nature.
>
> If Perle and Balsamides sold Protameen together, the price they received would reflect Protameen's illiquidity. They would split the price and also share that detriment. Similarly, if Balsamides pays Perle a discounted price, Perle suffers half the lack-of-marketability now; Balsamides suffers the other half when he eventually sells his closely held business. Conversely, if Perle is not required to sell his shares at a price that reflects Protameen's lack of marketability, Balsamides will suffer the full effect of Protameen's lack of marketability at the time he sells.

In the *Balsamides* decision, the Supreme Court distinguishes the two cases. In summary, the cases are distinct based on the facts and on the different statutes under which these cases arise. Regarding *Wheaton,* the Court states, "it would be unfair and inequitable to

> apply a marketability discount. To allow the major shareholders to buy out the minority dissenters at a discount would penalize the minority for exercising their statutory rights. Moreover, it would create the wrong incentives for shareholders." Regarding the *Balsamides* decision, the Court states:
>
> > In cases where the oppressing shareholder instigates the problems, as in this case, fairness dictates that the oppressing shareholder should not benefit at the expense of the oppressed. The statute does not allow the oppressor to harm his partner and the company and be rewarded with the right to buy out that partner at a discount. We do not want to afford a shareholder any incentive to oppress other shareholders.
>
> Despite the differences that appear to exist in the cases, the bottom line appears to be that the Court is looking for all shareholders to be treated fairly, regardless of the circumstances.[22]

This is a fairly obvious example of the case law in the shareholder dispute area. On the first reading of the cases, the reaction is that the Supreme Court of New Jersey contradicted itself. However, one of the major differences in these cases is that they arose from different causes of action. As a result, the judges' decisions were different. Another issue that becomes clear is the Court's attempt to be "fair" to both sides, which is one of the underlying themes of fair value.

Since the issues before the courts are numerous and case specific, a discussion of individual states' specific decisions has not been included. However, the appendix contains a list of some court decisions divided into those allowing discounts (by type) and those not allowing discounts (again by type). Some recent decisions are also discussed in Chapter 13 of this book.

COURT CASE CAVEATS

The last section of this chapter discussed the seemingly contradictory decisions that were not; the decisions were based on the statutes under which the cases were filed. But this is not the only problem that can occur when reading cases.

In some cases, there is a very specific issue before the Court. Readers who do not carefully analyze the case can be misled and apply a ruling to an incorrect set of circumstances.

> For example, the Supreme Court of Kansas recently ruled against both minority and marketability discounts in *Arnaud v. Stockgrowers Bank of Ashland* [1999 Kan. Lexis 645 (Nov. 5, 1999)]. However, the ruling was in response to the question, "Is it proper for a corporation to determine *fair value* of a fractional share, pursuant to K.S.A. §17-6405 by apply-

[22] Excerpted from *Valuation Trends*, the newsletter of Trugman Valuation Associates Inc. (used with permission).

> ing minority and marketability discounts when the fractional share resulted from a reverse stock split intended to eliminate the minority shareholder's interest in the corporation?"[23]

The decision in this case specifically related to this question, not to other questions regarding fair value. Therefore, unless the facts and circumstances of a case are similar to this, the ruling in this case may not be extended to other fair value cases.

In another case, the Minnesota appellate court relied on the two New Jersey cases discussed in the last section to disallow a discount for lack of marketability.[24] The problem with this decision is that the *Balsamides* and *Wheaton* cases reached opposite conclusions.

Finally, courts have reversed previous decisions,[25] so it is important to coordinate with the attorney on the applicable law.

CONCLUSION

Preparing valuation analyses and reports in the shareholder dispute arena can be fraught with uncertainty for the valuation analyst who has not done his or her homework. In conjunction with the attorney, the analyst must become generally knowledgeable about the statutes and case law in the jurisdiction where the lawsuit will take place to ensure that the proper methodology is followed to derive a supportable conclusion of value that will be accepted by the courts.

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[23] Fishman, Pratt et. al., *Guide to Business Valuation,* section 1502.11.
[24] *Ibid.,* section 1502.12.
[25] *Hansen v. 75 Ranch Company,* 1998 MT 77, 957 P.2d 32 (April 9, 1998).

APPENDIX

Jurisdictions/cases not allowing the application of a discount for lack of marketability:

Delaware: *In Cavalier Oil Corp. v. Harnett,* 564 A2d 1137 (Del. 1989)
Iowa: *Sieg Company v. Kelly,* 1997 WL 575996 (Surpreme Ct. of Iowa, 1997)
Maine: *In re Valuation of Common Stock of McCoon Oil Co.,* 565 A2d 997 (Me. 1989)
Missouri: *King v. F.T.J., Inc.,* 765 SW2d 301 (1989)
Nebraska: *Camino, Inc. v. Wilson,* 1999 WL 607845 (1999)
New Jersey: *Lawson Mardon Wheaton, Inc. v. Smith,* 1999 WL 492634 (1999)
Rhode Island: *Charland v. Country View Golf Club, Inc.,* 588 A2d 609 (R.I. 1991)
South Carolina: *Morrow v. Mart Schink III,* 922 F. Supp 1093 (1995)
Washington: *Pretiss v. Wesspur, Inc.,* 1997 WL 207971 (1997)

Jurisdictions/cases not allowing the application of discounts for lack of control:

California: *In Ronald v. 4-C's Electronic Packaging, Inc.,* 168 Cal. App.3d 290 [Cal. Ct. App. (D.V.7), 1985]
Colorado: *Cheesman Realty v. Moore,* 770 P2d 1308 (1988)
Delaware: *In Cavalier Oil Corp. v. Harnett,* 564 A2d 1137 (Del. 1989)
Illinois: *Laserage Technology Corporation v. Laserage Laboratories Incorporated,* 972 F.2d 799 (7th Cir., 1992)
Iowa: *Richardson v. Palmer Broadcasting Company,* 353 NW2d 374 (Iowa 1984)
Maine: *In re Valuation of Common Stock of McCoon Oil Co.,* 565 A2d 997 (Me. 1989)
Massachusetts: *Demoulas v. Demoulas,* 703 NE2d 1148 (Mass. 1998)
Minnesota: *MT Properties v. CMC Real Estate Corporation,* 481 NW2d 393 (Minn. Ct. App. 1992)
Missouri: *Hunter v. Mitek Industries, Inc.,* 721 F. Supp. 1102 (1989)
Montana: *Hansen v. 75 Ranch Company,* 957 P2d 32 (1998)
Nebraska: *Camino, Inc. v. Wilson,* 1999 WL 607845 (1999)
Nevada: *Steiner Corp. v. Benninghoff,* 5 F. Supp. 2d 1117 (1998)
Oklahoma: *Woolf v. Universal Fidelity Life Ins. Co.,* 849 P.2d 1093 (1992)
Oregon: *Tifft v. Stevens,* 162 Or. App. 62, 987 P2d 1 (March 11, 1999)
Rhode Island: *Charland v. Country View Gold Club, Inc.,* 588 A2d 609 (R.I. 1991)
South Carolina: *Morrow v. Mart Schink III,* 922 F. Supp. 1093 (1994)
Vermont: *In re 75,629 Shares of Common Stock of Trapp Family Lodge, Inc.,* 1999 WL 13243 (Vt. 1999)
Washington: *Pretiss v. Wesspur, Inc.,* 1997 WL 207971 (1997)
Wisconsin: *HMO-W v. SSM Health Care System,* 1999 WL 395650 (1999)

Jurisdictions/cases allowing the application of a discount for lack of marketability:

Colorado: *In WCM Industries, Inc. v. Trustees of Harold G. Wilson 1985 Revocable Trust,* 984 P2d 36 (Colorado Ct. App. 1997)
Georgia: *Atlantic States Construction, Inc. v. Beavers,* 314 SE2d 245 (Ga. Ct. App. 1984)
Illinois: *Independence Tube Corp. v. Levine,* 535 NE2d 92 (1988)
Kentucky: *Ford v. Couner-Journal Job Printing Company,* 639 SW2d 553 (1982)
New Jersey: *Balsamides v. Protameen Chemicals, Inc.,* 1999 WL 492630 (N.J. July 14, 1999)
New York: *In the Matter of Hahn's Old Fashioned Cake Company, Inc.* (November 15, 1999)

Jurisdictions/cases allowing the application of a discount for lack of control:

Kansas: *Moore v. New Ammest, Inc.,* 630 P2d 167 (1981)
Mississippi: *Hernando Bank v. Huff,* 609 F. Supp 1124 (1985)
New Mexico: *McCauley v. Tom McCauley & Sons, Inc.,* 724 P2d 232 (New Mexico Ct. App. 1986)

From: *Fundamentals of Business Valuation—Part 1*, 2000 edition (AICPA/PDI), pp. 6-22 to 6-24.

CHAPTER 15

Valuation Issues in Employee Stock Ownership Plans

A fair haired child of Congress and rightfully so.

Valuations of closely held securities held by employee stock ownership plans (ESOPs) differ from other types of closely held company valuations. It is important that the analyst understand these differences, especially the restrictions placed on ESOP shares. This chapter explores and defines these various differences, evaluates their individual and cumulative effect on the valuation process, and reconciles the findings. The focus here is to offer practical advice for the valuation of ESOP shares.

Employee stock ownership plans came into effect with the enactment of Employee Retirement Income Security Act (ERISA) in 1974. The intent of ERISA was to offer incentives to encourage companies to share equity ownership with employees.

An ESOP is an enhanced qualified profit-sharing retirement plan with employees as the beneficial owners of stock of the sponsoring company. ESOPs are designed to invest primarily in securities of the sponsoring corporation.

ValTip

Both private and publicly held corporations can establish ESOPs to encourage their employees to think and act like owners.

Parties with the legal responsibility for the operation and safety of a qualified retirement plan are termed fiduciaries. To assure that ERISA qualified plan rules are met, ESOPs must appoint a plan trustee(s) to act as the plan fiduciary and to manage the ESOP according to fiduciary standards promulgated by ERISA. These standards require that trustees act solely in the interest of the participants and beneficiaries with the care, skill, prudence, and diligence with which a reasonable person familiar with the circumstances would exercise.

Employee stock ownership plans are popular for a number of reasons.

- ESOPs provide attractive tax benefits to the sponsoring company and existing shareholders.

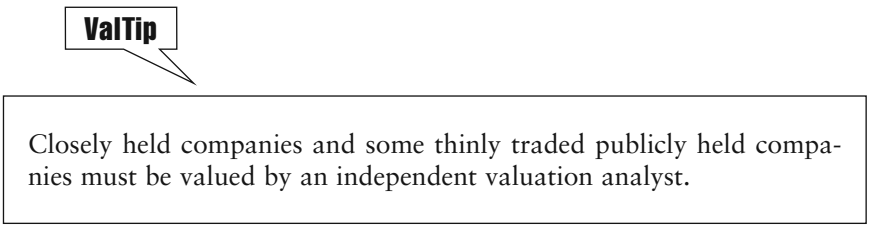
Note: Portions of this chapter were taken with permission from *www.nceo.org*, the web site of the National Center for Employee Ownership (NCEO), © 2002 NCEO.

- They allow sponsoring companies to borrow money and repay it in pretax dollars.
- ESOPs provide a way for owners of closely held businesses to sell all or part of their interests and defer taxation on the gain.
- They also make it possible for companies to provide an employee benefit by contributing common stock on a tax-deductible basis to the plan.

Due to the highly technical nature of ESOPs and ESOP valuations we have relied on and/or extracted relevant language from available sources including the Internal Revenue Code, Revenue Rulings, Private Letter Rulings, Treasury Regulations, Department of Labor information, etc. These sources are listed at the end of this chapter.

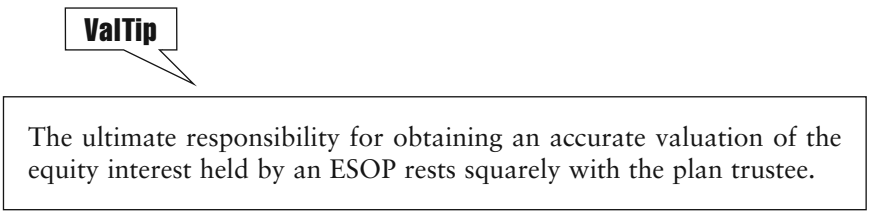
NEED FOR VALUATION SERVICES

All ESOP transactions must be based on the current fair market value of the sponsoring company's shares. Publicly traded companies typically use the trading price of their stock, which is at fair market value.



The valuation of an equity interest held by an ESOP may be used by a number of stakeholders:

- Plan trustee
- Plan participants
- Existing shareholders
- Sponsoring company
- Internal Revenue Service (IRS)
- Department of Labor (DOL)



The ESOP plan trustee engages the valuation analyst and receives the final written valuation report. The ESOP or, more commonly, the sponsoring company, pays

the analyst's fee. Either payor is acceptable and will not compromise the independence of the analyst.

The Tax Reform Act of 1986 requires an annual valuation of the shares held in the ESOP of the sponsoring closely held company. A valuation also is required when the ESOP makes its first acquisition of stock, when the ESOP liquidates its stock position, and whenever there is a transaction with a controlling stockholder or member of a control group.

Every valuation must fulfill the regulations of both the IRS and the Department of Labor.

"Adequate consideration," which is discussed later, is the fair market value of the asset as determined in good faith by the trustee or named fiduciary pursuant to the terms of the plan and in accordance with regulations promulgated by the Secretary of Labor. The trustee or fiduciary is required to act in good faith, having arrived at a determination of fair market value through a prudent investigation of circumstances prevailing at the time of the valuation and with the application of sound valuation principles. The analyst preparing the valuation also must be "independent" of all parties to the transaction.

In valuing the stock held by an ESOP, it is important that the analyst obtain a variety of information related to the ESOP. The analyst will need to review the ESOP plan documents and estimates of contribution levels to the plan and, if leveraged, a copy of all loan documents, including the terms and conditions of the debt. Additionally, the analyst may obtain a copy of the ESOP plan financial statements, minutes of the company's board of directors dealing specifically with the ESOP, and a review of the stock record book.

SECURITIES LAWS AND ESOPs

All states have securities boards or commissions. At the federal level, the Securities and Exchange Commission (SEC) regulates securities. Securities boards provide direction to businesses for limited and private securities offering exemptions to the various rules and regulations. Each securities commission provides information for the securities laws of that jurisdiction. Thus exemptions in one state may not apply to another. An analyst should be familiar with the securities laws of the company's state of incorporation and in particular with any exemptions to that state's applicable laws.

Since the late 1990s there has been a softening in the regulatory environment relative to unregistered, private securities. Many private companies have complained of limitations, restrictions, and cumbersome compliance issues, prompting the relaxation of the rules. The result has been a friendlier, less restrictive environment for unregistered securities.

Within reason, if a private company uses its equity as an incentive to compensate its employees, the rules generally allow for some form of exemption from registration. This is particularly true of securities offered through an ESOP.

The ESOP is considered as a single shareholder for purposes of compliance with all securities and tax laws. As an ERISA qualified plan, employee participants share in allocated holdings through a pooling of plan assets, net of liabilities. The trustees have the responsibility of voting the shares as a block in restricted, specific instances.

HOW ESOPs ARE USED

An ESOP can buy new or existing shares of the sponsoring company. The ESOP's ability to purchase the company's stock can accomplish a number of goals for the company.

- ESOPs may be used as a succession planning tool where the ESOP buys the shares of a retiring shareholder. Among other benefits from this approach, the owners can defer tax on the gain made from the sale if the ESOP holds 30 percent or more of the company's stock after the transaction is complete. In addition, the ESOP's share purchase can be made, in many cases, with tax deductible dollars.
- ESOPs may be used to divest or acquire subsidiaries, to buy back outstanding shares in the market, or to restructure an existing benefit plan by replacing current benefit contributions with an ESOP.
- ESOPs may be used to buy newly issued shares in the sponsoring company. The sponsoring company can use the proceeds of the sale for any legitimate business purpose. In a leveraged ESOP scenario, the sponsoring company can, in effect, finance growth or acquisitions with tax-deductible debt repayments and simultaneously set up a qualified employee benefit plan.
- The ESOP creates a known means of liquidity for the shareholder in a closely held business.

ValTip

The ESOP generally borrows funds to conduct such transactions from or through the sponsoring company, although the company can simply contribute new shares of stock to an ESOP or contribute cash to buy existing shares.

ESOPs became more common as companies saw the benefits of having employees take pride in ownership when provided with meaningful incentives.

DIFFERENCES IN ENTITY STRUCTURE

ESOPs can own stock in subchapter C or S corporations. While S corporation ESOPs operate under most of the same rules that C corporations do, there are important differences:

- Interest payments on ESOP loans count toward the annual plan contribution limits in S corporations but not in C corporations.
- Certain flow-through distributions to ESOP participants that would be deductible to a C corporation are not deductible to an S corporation.
- Sellers to an ESOP in an S corporation may not qualify for the tax-deferred rollover treatment.
- For plan years prior to January 1, 2002, the annual limit on contributions was 15 percent of pay per year for an S corporation. In a C corporation, the ESOP contribution could be combined with a money purchase plan to obtain a 25 percent limit. For years after January 1, 2002, there is no difference in the limitations available to an S or a C corporation.
- An ESOP in an S corporation is unique in that neither it nor the sponsoring company pays federal income tax. In some states, the ESOP and the sponsoring company also may not pay state income or franchise tax.
- As an S corporation shareholder, dividends paid to the ESOP on unallocated shares in the plan can be used to repay ESOP debt to the lender.

These differences can make converting to an S corporation enticing when a C corporation ESOP owns a significant portion of the sponsoring company's stock.

As with all S corporations, shareholders receive pro rata distributions when, and if, dividends are paid and the ESOP proportionately participates in the dividend with other shareholders. The ESOP can apply dividend distributions to purchase additional outstanding or new issue shares, to create a fund for future repurchase requirements, and/or to invest as additions to individual participant accounts. While the S corporation rules make an ESOP very attractive, legislation passed in 2001 makes clear that these rules are not to be abused by companies creating the ESOPs to benefit a few people.

Where cash dividend payments are made by an S corporation, the distributions generally are made to meet the personal tax obligations of the non-ESOP shareholders and flow directly to them. Cash distributions to the ESOP flow to the ESOP trust. In both scenarios, the cash is no longer available to the company for investment in the operations of the enterprise. The ESOP, with some restrictions, can use these dividend distributions to:

- Lower company contributions to the plan
- Pay down existing debt
- Purchase or repurchase shares or
- Pay plan benefits

In the case of an S corporation that is owned 100 percent by an ESOP, the cash retention to the company can be significant, since no payments are required for federal income taxes. Therefore, the company realizes on an annual basis a cash savings equal to the dollar amount of the taxes the company would have paid if it were a C corporation.

Based on the sponsoring company's entity structure, the absence or reduction of income taxes and the deductibility from taxable income of loan principal may represent cash savings to the sponsoring company. Some analysts conclude that these cash savings translate into some form of enhanced value to the company shares.

In an ERISA benefit plan environment, the primary role the ESOP plays is that of a buyer, i.e., buying shares from non-ESOP shareholders, buying newly issued or Treasury shares, or receiving its shares as contributions. When a plan participant tenders shares at retirement or other plan termination, the ESOP again acts as a buyer under the repurchase "put" right provisions, often termed the put option. Thus, no adjustment in value may be appropriate in the valuation of ESOP shares where the value benefit(s) is a result of an accrual specific to the shares while they are in the plan. The exempt tax status of an S corporation ESOP, or similar enhancement, does not continue with the shares after they are transferred to a participant in termination.

ADEQUATE CONSIDERATION: HOW AND WHY IT WORKS

"Adequate consideration" as defined by the DOL, has a very specific meaning in the valuation of ESOPs. In essence, it says that the ESOP trustee is responsible to employee participants to ensure they are not disadvantaged by what the plan pays for sponsoring company shares nor disadvantaged by what they receive upon plan termination.

ValTip

Expounding on the DOL "adequate consideration" requirement, the ESOP cannot pay more than FMV for its shares or sell for less than FMV.

The ESOP cannot pay more than adequate consideration in a purchase of shares and must pay fair market value (FMV) when the participant cashes out of the plan. Assume the plan trustee accepts the appraiser's valuation as reasonable at $20 per share for purposes of adequate consideration. A non-ESOP shareholder is selling shares and the plan purchases them for $19 per share. Obviously the ESOP has not paid more than adequate consideration and is well within the prudent rules and intent of the DOL. In contrast, an ESOP participant terminates the plan, tenders shares, and, for the sake of this illustration, the ESOP purchases the shares. In this instance the trustee will pay $20, which is the fair market value for the ESOP shares, as is required. This price does not disadvantage the ESOP participant who is leaving or those who remain. Paying more than fair market value would be greater than adequate consideration and not be in compliance with the adequate consideration provisions.

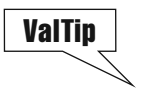
PUT RIGHTS OF TERMINATING PLAN PARTICIPANTS

Private companies provide their ESOP participants with put provisions (rights), which allow them, when terminated due to retirement, disability, or death, to sell their stock back at FMV to the sponsoring company at any time during two put right periods. These two put right periods have a duration of at least 60 days following the date of distribution and at least 60 days in the following plan year.

Participants will receive payment for any shares sold under the put right, which will begin within 30 days after the participant exercises the put right. Most companies fund this either by making tax-deductible contributions to the ESOP, which the ESOP uses to repurchase shares, or by purchasing the shares back themselves and recontributing them to the ESOP, which is also a tax-deductible contribution, or by decreasing the size of the ESOP by keeping treasury shares.

When a participant puts stock, the sponsoring company must make a decision whether to redeem or recirculate that stock. In redeeming the shares directly from the participant, the company uses its assets to buy the shares. The effect is to reduce the value of the sponsoring company by the amount of the purchase with a corresponding reduction in the number of shares outstanding. There is no dilutive effect as a result of the redemption on the per-share value to the remaining shareholders as long as the transaction occurs at fair market value. The other repurchase option available to the company is to repurchase the shares from the participant and then contribute those shares to the ESOP for redistribution to remaining employees as part of a continuing benefit. Whether the shares are contributed or purchased by the ESOP trust, they are reallocated to the remaining participants. In this manner, the remaining participants receive compensation. The end result is to provide the company with an opportunity to make tax-deductible contributions to a qualified plan and to maintain the relative size of the ESOP.

Participants also have diversification options. When an employee has held ESOP stock for at least 10 years or reaches age 55, that employee has the option of diversifying up to 25 percent of the ESOP account value. This option continues until age 60, at which time the employee has a one-time option to diversify up to 50 percent of the account.



Plan provisions written at the time of the inception of the ESOP are very important and have an effect on when distributions will occur.

Three factors have an affect on the amount of the repurchase obligation caused by put rights:

1. Size of the ESOP
2. Rate of employee turnover
3. Growth of the underlying stock value

The size of the ESOP is measured as a percentage of ownership of the company. The magnitude of the repurchase obligation would be smaller for a 40 percent ESOP-owned company than for a 100 percent ESOP-owned company. All other things being equal, each ESOP participant will have a beneficial right to the value of a greater number of shares as the ESOP ownership percentage increases.

An understanding of the differences in the methods of redeeming ESOP shares and recognition of the effect of the repurchase obligation on the value of the company is essential. Quantifying the repurchase obligation is possible and requires pro-

jections of the number of shares expected to be eligible to be put to the company in the future. Repurchase obligations are discussed in detail later in this chapter.

ValTip

The greater the employee turnover, the higher the expected level of repurchase obligation. The higher the growth of stock value of the sponsoring company, the more the per-share distributions must be. The effect on the dollar amount of the repurchase obligation can be substantial.

ValTip

It is important to understand and plan strategies for dealing with repurchases early in the life of an ESOP company.

ESOPs AND PLAN CONTRIBUTIONS

Contributions to ESOPs are unique in several respects compared to other qualified plans. Shares of sponsoring company stock at current fair market value and/or cash can be used as a qualified plan contribution with different financial effect to the cash flow of the sponsoring company; yet they both achieve a tax-deductible charge against income. However, when the sponsoring company contributes stock to an ESOP, there is a corresponding dilution of current share values as newly issued shares and/or Treasury stock become outstanding shares.

Valuations of ESOPs will focus on the ways in which the different types of contributions affect the sponsoring company's earnings and cash flows and, thus, the value conclusion. In this regard two questions may be asked:

1. How does the amount of the contribution compare to deductions/expenses for similar compensation or benefit plans?
2. What effect does the contribution have on a pretax and pre-ESOP benefit basis to the sponsoring company?

The analyst should understand the tax benefit derived from share contributions since ESOPs reflect a positive cash flow in much the same way as amortized expenses do; that is, the sponsoring company funds an employee benefit without an outlay of cash and receives a tax deduction for it. The analyst will need to ensure that the cash flows reported are reflective of the tax benefits achieved through stock

contribution. Also, the analyst may study the probability of the sponsoring company making stock contributions on an ongoing basis and adjust the projected benefit stream for any resultant dilution of share value.

ESOPs THAT INCLUDE DEBT

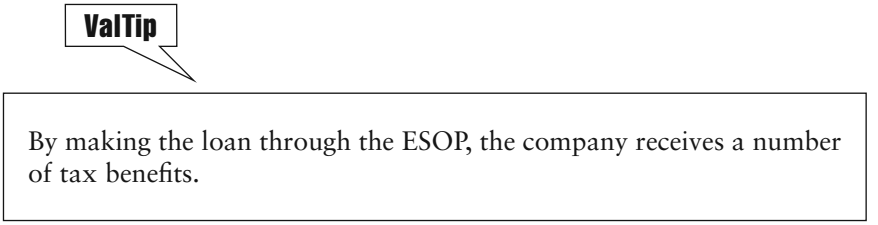
Employee stock ownership plans are unique among benefit plans in that they can borrow money to make acquisitions of the sponsoring company's stock. Perhaps the most complicated incentive- and benefit-rich transactions involve ESOPs borrowing money to acquire stock of the sponsoring company.

In a leveraged ESOP, the ESOP or its corporate sponsor borrows money from a qualified lender. The proceeds from the loan can be used to buy stock from one or more existing owners and/or from the sponsoring company. The lender requires the corporation, and sometimes the selling shareholders, to offer surety and guarantees for the repayment of the loan. The sponsoring company makes annual cash contributions to the ESOP that repays the loan with tax-deductible contributions to the plan over the amortized loan period.

Two tax incentives make borrowing through an ESOP extremely attractive to companies that otherwise might never consider financing their employees' acquisition of stock:

- Contributions to ESOPs are tax deductible to the sponsoring corporation; it gets to deduct principal as well as interest from taxable income. This can cut the cost of financing to the company significantly by reducing the number of pre-tax dollars needed to repay the principal.
- Dividends paid on ESOP stock passed through to employees or used to repay the ESOP loan are tax deductible, which may increase the amount of cash available to the sponsoring company.

Proceeds from the loan can be used for any legitimate business purpose, including acquiring shares from existing shareholders. The acquired stock is placed into a suspense account, where it is released to individual participant accounts as the loan is repaid.



One benefit for the company is the ability to deduct the entire loan payment as an ESOP contribution, subject to certain payroll-based limitations. In a C corporation, the company, within limitations, can deduct interest and principal of the loan. Additionally, a C corporation can deduct dividends paid on the shares acquired with the proceeds of the loan.

A thorough evaluation of investor risk and valuation methods is needed to correlate the relevant effects of ESOP debt, required plan contributions, and the value of the ESOP equity shareholders. Based on company-specific factors, additional risk generally is associated with companies with a higher degree of leverage. This additional risk is reflected in the analysis of the sponsoring company's overall risk. Generally, an additional risk premium may be needed for the use of ESOP debt when the proceeds are for nonoperating purposes associated with the purchase of existing shares from existing shareholders of the sponsoring company. Conversely, given the same ESOP debt, the proceeds can be used for operating purposes where the ESOP buys from the sponsoring company via its treasury or newly issued shares and the proceeds are used to expand the business, acquire a subsidiary, or replace existing debt of the company. This situation may not require an additional risk premium. An additional risk premium may not be necessary as an investor may see the incentives of deductible note principal as more advantageous, although in this instance the increase in the number of shares outstanding can cause a dilutive effect. The risk factors will be adjusted accordingly as the ESOP debt is repaid over the amortization period.

In valuation and economic theory, the value of an investment is the risk-adjusted present value of anticipated future benefits generated from the investment. For this reason, in a leveraged ESOP valuation, the analysis of the sponsoring company's forecasted earnings and free cash flows is of paramount importance. Discounting the projected debt free cash flow at a discount rate that reflects risk appropriately is essential. All debt (generally considered to be long-term debt with consideration of the attributes of routinely renewed working capital and line-of-credit debt) net of any federal income tax benefits (some analysts disagree) that may accrue to the ESOP portion of the debt is then deducted from the discounted debt free cash flow to establish an indication of value.

When guideline companies and other public market data are used, the analyst should consider the difference in capital and debt structure, including the debt-free earnings and cash flows of the guideline and sponsoring companies.

GENERAL CONSIDERATIONS FOR ESOP LOANS

An ESOP can borrow money from virtually anyone, including commercial lenders, sellers of its stock, and the sponsoring company. The proceeds can be used to make acquisitions of the sponsoring company stock. Debt capital generally is obtained by the plan in one of three ways:

1. A direct loan to the ESOP from a third-party lender, which generally requires the guarantee of the sponsoring company
2. An indirect loan, often termed a mirror loan, made to the sponsoring company by a third-party lender, which is then lent to the ESOP with identical terms and conditions
3. A direct loan from the sponsoring company to the ESOP with no assistance from a third-party lender

The mirror loan is the most common way for the ESOP to obtain debt capital, primarily because mirror loans enable the lender to secure the loan with sponsoring company assets that the ESOP itself does not own. The sponsoring company then

lends the proceeds to the ESOP, which uses them to buy new or treasury shares of stock. Thus, the company can use the funds for company operations or to purchase existing outstanding shares.

Any loan to an ESOP must:

- Have reasonable rates and terms
- Be repaid solely from employer contributions, dividends on shares in the plan, earnings from other investments in the trust, or the proceeds from the sale of employer securities

There is no limit on the term of an ESOP loan other than what lenders will accept. Generally ESOP loans amortize over five to seven years.

In some cases, usage of debt by an ESOP may result in a decline in the sponsoring company's equity value. The primary rationale for this decline involves a transaction where the sponsoring company borrows, then "mirror loans" the ESOP the same funds that, in turn, purchase outstanding shares of the sponsoring company stock from an existing shareholder(s). The resulting debt, if material, has a direct and likely depressive impact on the equity value of the sponsoring company as the proceeds of the loan are not being used in the direct operations of the business and the ESOP's repayment of the debt is, by and large, dependent on the sponsoring company for cash contributions to the plan to repay the loan and associated interest.

In this illustration, there has been no change in the number of outstanding shares. Only an ownership exchange from one shareholder(s) to another, the ESOP, has occurred. Any depressive impact on the share value is offset, to some extent, by the present value of the tax shield (not all analysts agree) associated with paying off the debt principal and associated interest with pre-income tax-deductible contributions to the plan. Other possible reductions in expenses may allow for similar offsets, such as concessions made in wages and/or other benefits.

When the ESOP uses debt to acquire company stock, the encumbered, collateral company shares in the plan are held in a suspense account. As the loan principal is repaid, these suspense shares are released and allocated to the individual accounts of plan participants at values based on the original cost of the shares. Thus the amount of the paid shares released each year is rarely the same as the amount contributed to repay the loan principal. If the price of the shares goes up, the amount released will be higher, in dollar terms, than the amount contributed. If the price goes down, the dollar value of the amount released will be lower. The current estimated FMV of the shares released is the amount reported by the company on its income statement, where it is recorded as a compensation cost. This difference is not tax deductible, and this treatment is in accordance with American Institute of Certified Public Accountants (AICPA) Statement of Position (SOP) 93-6.

ACCOUNTING STANDARDS AND ESOPs WITH DEBT

The AICPA issued a Statement of Position (SOP) 93-6, *Employers' Accounting for Employee Stock Ownership Plans*, with an effective date for financial statement presentation of accounting years beginning after December 15, 1993. Existing ESOPs will apply this approach to all new acquisitions of shares but not to refinancing of old acquisitions, since prior ESOP transactions are allowed to retain their prior accounting treatment.

Balance Sheet Issues and the Leveraged ESOPs

Under SOP 93-6, a company's direct and indirect loan arrangements for the ESOP loan should be shown as an obligation (liability) of the company with a contra account as a reduction in the equity section termed "Unearned ESOP Shares." These unearned ESOP shares are known as suspense shares representing the pledged ESOP shares. As the ESOP debt is repaid, the suspense shares are released and are allocated in a way that may not necessarily be proportionate to the debt reduction. Dividends on allocated shares and released but unallocated shares are charged to retained earnings. In cases where there has been an increase in the market value of the stock over that of suspense shares, the increase is added to paid in capital. No financial statement consideration is given to the future tax benefits derived by the income tax deductibility associated with the repayment of the ESOP debt principal.

The plan buys shares of stock from treasury, new issues of the sponsoring company, existing shareholder(s), or any combination of the three. Repayment generally occurs not less frequently than quarterly. The sponsoring company makes repayment of the loan to the ESOP as a tax-deductible plan contribution. In the case of a direct loan, the plan pays the lender directly from the funds contributed to it by the sponsoring company for the purpose of loan repayment. In the case of an indirect loan, the company pays the lender directly and accounts for the transaction as a plan contribution, thereby eliminating the need to contribute to the plan. Then the plan repays the sponsoring company.

SOP 93-6 requires the sponsoring company to record the transaction as a treasury stock acquisition for both direct or indirect loans used to purchase stocks held by shareholders in the open market. A subsequent issue of the shares to the ESOP is recorded by relieving the treasury stock account of the acquired shares and creating a contra equity account, "Unearned ESOP Shares." Should the ESOP acquire new issue (unissued) shares from the company, the company will increase the common stock account at the current value of the shares with a corresponding entry to the "Unearned ESOP Shares" account.

Earnings per Share Issues

Dividends on released common shares constitute an exchange of ESOP shares for compensated services (earned). As such, they are considered outstanding for earnings-per-share calculations. However, shares that are not to be released (suspense shares) are not considered "earned" and are not outstanding in the earnings-per-share calculations.

Dividends on convertible preferred stock issued to an ESOP will affect earnings-per-share calculations since they can be paid on allocated or unallocated shares

and are recorded differently by the company on leveraged ESOP shares depending on that allocation. In essence, the sponsoring company has control of dividends on the unallocated shares. Thus, when dividends paid on unallocated shares are used for debt service, the liability for the debt or accrued interest is charged and if added to participant accounts, they are charged as compensation expense. In both instances payment of dividends on unallocated shares requires no accounting adjustments to the net income in the earnings-per-share calculation.

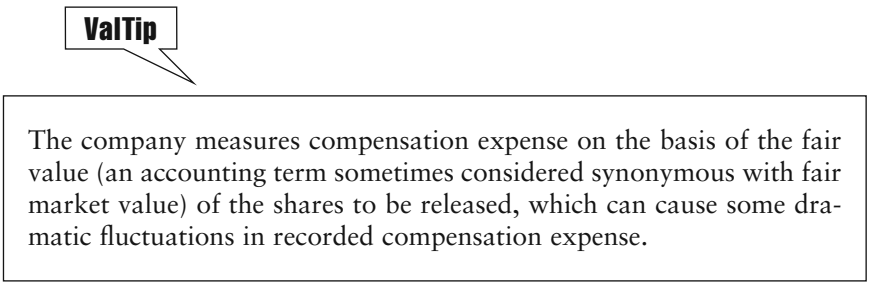
Dividends paid on allocated shares added to participant accounts are no different from any other dividend on convertible stock and are included in the EPS calculation using the if-converted method. If the dividends on the allocated shares are used for debt service, net income in the EPS calculation may need reduction.

Statement of Income Issues for the Leveraged ESOP

There are two primary issues relative to income statement presentation for leveraged ESOPs:

1. The measurement of compensation expense associated with the ESOP plan
2. The period with which that expense is to be associated

Each accounting period has a different compensation expense, which fluctuates with the market price of the shares to be released.



The average value of compensation expense for the year is used, since the stock is considered earned throughout the year. This treatment differs in nonleveraged plan accounting, since compensation expense is equal to the cash paid for the shares committed at the date of the commitment.

Dividends and the Leveraged ESOP

For financial statement purposes, dividends are chargeable to retained earnings and not compensation expense with one exception. In the case where dividends are paid on unallocated shares arising from prepayment of debt, they will be treated as compensation expense. If they can be used to satisfy an obligation of the plan, the payment will no longer have the characteristics of a dividend. Additionally the financial statement presentation affects the income statement of the company as compensation expense, not as a charge against retained earnings on the balance sheet.

Valuation Impact

Financial statement presentation for leveraged ESOPs under SOP 93-6 remains controversial. While SOP 93-6 attempts to address financial reporting inconsistencies with leveraged and nonleveraged plans found in the superceded SOP 76-3, it does not create a clear picture for valuation purposes and presents several issues that must be reconciled as follows.

There are no real generally accepted accounting procedures (GAAP) differences between SOP 76-3 and SOP 93-6 and, thus, no valuation adjustments warranted for a nonleveraged ESOP. However, for a leveraged ESOP, the difference between the two is significant.

Prior to the enactment of SOP 93-6, neither "suspense shares" nor "fair value" compensation expense required differentiation of the proper accounting period for share allocation. Treatment in SOP 93-6 results in fluctuations of compensation expense based entirely on estimates of a nonexisting market where hypothetical willing buyers and sellers are used to match employee-earned services with an estimated value of shares. In addition, prior to SOP 93-6, the number of shares outstanding did not depend on whether shares had been released during debt repayment and classified as "allocated" shares. Instead, it follows an economic rationale of ownership with debt as collateral rather than a debt controlling the ownership relationship.

Armed with a clear understanding of the financial presentation requirements of GAAP, the analyst may find it difficult to support certain provisions of SOP 93-6 in the valuation of leveraged ESOPs without economic and monetary adjustment. By not considering adjustments, the value indication could result in a material misstatement, an unsupportable valuation conclusion, and possible breach of the "adequate consideration" rules promulgated by the DOL.

In a leveraged ESOP valuation, while the loan is made with the company as guarantor or the maker of the ESOP loan, the economic realities of the transaction cannot be ignored. In most leveraged transactions involving ESOPs, the plan is a pledgor of the shares that come from purchases from shareholders. It is not unusual for lenders to require the ESOP shares as collateral acquired from the seller. When the sponsoring company uses proceeds for non-operating purposes, the share proceeds from the sale (perhaps in the form of qualified replacement property in the case of qualified tax-deferred gains under provisions of the IRS), sponsoring company business assets, and the sponsoring company (along with a personal guarantee of an officer of the sponsoring company or the selling shareholder or both) may be a condition of the loan.

If the ESOP loan were buying new issues of the sponsoring company, the company would be the recipient of the proceeds of the loan, thereby increasing company assets and cash flow for reinvestment in corporate growth.

In essence, these valuation adjustments may be considered:

- Fluctuating compensation expenses based on unallocated suspense shares as period charges using estimated "fair values" should be adjusted to their original cost and allocated as an expense at that time and as the principal of the debt is reduced.
- All shares of stock owned by the ESOP, whether held as suspense, unallocated shares, or allocated shares, may be considered outstanding to capture the fully dilutive effect.

VALUE FOR ESOP SHARES

The characterization of the premise of value for all ESOP transactions of employer securities, where no public market exists, is the responsibility of the Plan trustee. The appraiser's responsibility is to maintain adherence to the promulgations of the Internal Revenue Service and Department of Labor specific to the valuation. In most cases, the value will be that of a noncontrolling, nonmarketable, (minority) interest. (Special consideration is given to extraordinary liquidations, sales or mergers of the company that are outside the discussion in this chapter.)

There are circumstances whereby the ESOP shares will be treated as in a "control position." The DOL has established criteria that:

- Establishes the importance of differentiating a minority and control interest
- Scrutinizes whether or not the seller of the shares of stock would be able to obtain a control premium from an unrelated third party with regard to the block of securities being valued
- Establishes the importance of the ESOP maintaining actual control in both form and substance, which has passed to the ESOP or will be passed to the ESOP within a reasonable period of time, pursuant to a binding agreement in effect at the time of sale
- Establishes the requirement for a reasonable assumption that the ESOP's control will not dissipate within a short period of time subsequent to acquisition
- Requires that the valuation report include all relevant factors considered in the determination of the applicability of a control concept.

Adjustments for Lack of Control

An ESOP should not pay more for shares of stock in the sponsoring company than any other hypothetical buyer would at the same point in time, given the same relevant facts.

ESOP valuations are usually that of a noncontrolling interest, unless compelling requisite relevant factors and empirical evidence are available to support a control value.

Determining the degree and extent of control purchased or exercised by the ESOP is a significant challenge for the analyst. The Department of Labor considers control as determined not only by the size of the block of shares held by the ESOP, but also by the prerogatives those shares give to the plan in both form and substance.

The DOL makes a clear distinction between numerical and actual control when the ESOP owns, or can reasonably expect to own, more than 50 percent of the sponsoring company's common stock. While the DOL acknowledges that a control pre-

mium may be applicable in certain instances, it stresses that there must be compelling evidence of actual control in addition to numerical control, which must or will pass to the ESOP, and that control will not dissipate over time.

In a private company setting, a minority interest adjustment sometimes is taken as a discount from control value of the sponsoring company. In most cases, the adjustment results in a minority interest that is worth less than its proportionate share of the value of all the outstanding shares. The magnitude of a minority interest adjustment depends on the shareholder's inability to exercise any or all of the rights typically associated with the ownership of the shares.

This adjustment should take into account the full definition of fair market value, including the assumption of a hypothetical buyer and seller outside the setting of the ESOP. The philosophy behind and quantification of a minority interest adjustment is crucial in the valuation of closely held stock for purposes of ESOP transactions of the sponsoring company shares. A minority interest discount is a reduction to the initial indicated value due to a lack of control prerogatives such as declaring dividends, liquidating the company, going public, issuing or buying stock, directing management, and setting management's salaries.

Quantifying the amount of minority interest adjustment rests with the facts and circumstances of the engagement and a good-faith interpretation of the relevant facts, including a close analysis of the DOL-proposed regulations.

When valuing a minority block of stock of a closely held corporation, no range of discounts is universally applicable in all circumstances.

While the ESOP may transact a larger block of stock as a percentage of the company, the participants will generally transact in a small holdings of minority interests. The analyst should search for verifiable exchanges/sales of the sponsoring company stock within a reasonable period of time prior to the valuation date.

Voting and Other Rights of the ESOP Shareholders

Voting rights need to be "passed through" to the ESOP beneficiaries only on issues that require majority stockholders to vote. In public companies, voting rights are passed through to plan participants as with other shareholders. In private companies, ESOP participants must be able to direct the plan trustee on the voting of allocated shares regarding such issues as mergers, liquidation, and recapitalization. In cases where a vote pass-through is required, appropriate information on the issues must be provided, just as it would be provided to other shareholders.

Participants in an ESOP do not have rights to the sponsoring company's financial statements, stock record books, or information on salaries. Disclosures of these items are at the discretion of the sponsoring company. However, as a practical matter, summary financial information often is made available to the plan trustee.

Adjustments for Lack of Marketability

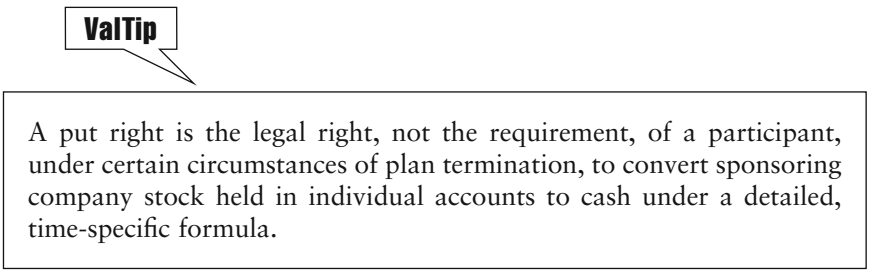
Marketability adjustments are intended to reflect hypothetical buyers' concerns regarding the absence of a ready and available market when they decide to sell. In contrast to shares of stock in public companies that have an active market, ownership interests in closely held companies are typically not readily marketable. Therefore, often it is appropriate to apply an adjustment in the form of a discount to the value of closely held shares to reflect the reduction in value due to lack of marketability. The magnitude of the discount for ESOP company shares is measured on the basis of the effects of such factors as:

- Restrictions on transfer
- Buy-sell agreement or bylaws
- Prospect of a public offering or sale of the company
- Viability and strength of the put right and the capacity to acquire shares
- The market available that may be interested in purchasing shares
- Dividend yields in distributions

When referencing publicly traded securities in valuing a minority position in a closely held ESOP corporation, an adjustment for the lack of marketability of the privately-held interest may be appropriate, since the shareholders have no access to an active public market for their investment. Further, shareholders cannot force registration to create marketability. Without market access, an investor's ability to control the timing of potential gains and losses and to minimize the opportunity cost associated with alternative investments is impaired. Given two investment instruments identical in all other respects, the market will typically accord a considerable premium to one that can be liquidated into cash instantly, especially without risk of loss in value. For this reason, an investment in a privately held company usually is adjusted to a lesser stock price than an otherwise comparable investment in a publicly traded entity. Shares of ESOPs are subjected to much the same lack of marketability as non-ESOP shares. The only difference is the required put right provisions, which can substantially reduce this discount. For private stock, several types of empirical studies including restricted stock studies and pre-initial public offering studies, and certain models can be used to indicate the adjustment for marketability. See Chapter 8 for more detail concerning these studies and models.

Repurchase Requirement: How to Deal with It

An ESOP repurchase requirement is a right or claim made by a plan participant to the sponsoring company to convert vested ESOP shares to cash upon the participant's departure from the plan. This conversion right of the ESOP participant is a plan requirement that obligates that sponsoring company to repurchase the stock at fair market value from terminating participants.



There is no Accounting Standard requirement to accrue a repurchase liability for the ESOP plan shares on sponsoring company financial statements or to include such in a financial statement footnote disclosure, even though the estimated amount of liability may, in some cases, be material.

If the stock held by an ESOP participant is not readily tradeable, the IRS requires the company to provide the participant with the right to demand that the sponsoring company repurchase the participant's stock under a fair valuation formula within a definitive time period. Under this IRS Tax Code section, the ESOP participant who has terminated by reason of death, disability, or retirement, has two 60-day windows for the company to repurchase ESOP shares. Those two 60-day window periods are:

1. Immediately after the distribution
2. One year later, allowing for the next valuation of the shares to have taken place

For the participant who leaves the plan for reasons other than death, disability, or retirement, the repurchase obligation can be delayed until the end of the fifth year following the year the participant terminates with the company. The repurchase can be paid in a lump sum or can be paid out over an extended period of time and is based on the fair market value of the shares at the time of distribution.

In most cases, ESOP participants tender their shares under the put right. In the case of C corporations, participants have the option to keep the shares after leaving the plan and the company. However, the company can place limits on what the terminated participant can do with the shares and also retains the option to buy back the ESOP shares. This ensures that former plan participants will not transfer the shares outside the company. The majority of ESOP shares tend to be repurchased in a lump sum. Either the sponsoring company will purchase the shares as treasury stock or make contributions to enable the ESOP to make the repurchase. It is also possible that the ESOP itself may use its available funds to make the acquisition. ESOP trust agreements basically specify three ways for shares of the sponsoring company stock to be purchased:

1. The ESOP may purchase the shares using pooled funds residing in the plan at the time the participant requests liquidation of his or her account.
2. If the ESOP does not have available funds, the sponsoring company may make a cash contribution to the plan to acquire the shares from the participant. (The shares of stock held in the plan and those held outstanding by the company are identical as before the purchase. Only the assets held in the plan have changed. This repurchase method is often referred to as recirculation of the shares.)
3. The sponsoring company may purchase the stock as a treasury redemption purchase. The number of shares outstanding and the amount of cash expended in the transaction will be reduced proportionate to the value of the overall company on an aggregate minority interest basis. This repurchase method is often referred to as redemption of the shares.

Special situations apply to S corporation repurchases of shares. Since S corporations are pass-through entities, the *pro rata* share of ownership earnings and profits passed to an ESOP is not subject to income tax. In addition, dividend

distributions received by an ESOP on allocated shares are considered plan earnings that are allocated to participants based on accumulated account balances. When these dividend plan earnings are used to repurchase shares from departing ESOP participants, the repurchased shares will be allocated proportionately only to those participants who received the dividend. This differs from using company contributions to repurchase stock where repurchased shares are allocated based on eligible annual compensation.

The size of the repurchase obligation changes over time. Leverage, vesting, underlying stock value, age of participants, company-specific personnel turnover, and amount of available liquidity in the ESOP must all be considered to determine the existence, size and effect of the liability.

ValTip

It can be difficult to forecast repurchase obligations much farther than a few years and to estimate the present value of future repurchase obligations.

For valuation purposes, the materiality of the sponsoring company obligation will depend on several factors, including the company's:

- Ability to borrow money
- Availablity of continued operating income of the size and timing to meet normal participant attrition
- Adequacy of cash reserves that could be used to buy departing participant shares

The contemplated liquidation or sale of the sponsoring company or the termination of the ESOP itself would be considered an extraordinary event that should not be factored into a typical repurchase obligation study.

The ESOP plan was created for the ongoing benefit of the employee participants for their retirement. Assuming that the analyst determines that a material repurchase obligation exists and assuming that repurchase amounts can be calculated with reasonable accuracy and reasonable economic certainty, a valuation adjustment may be warranted and a liability account established to reflect the obligation as a liability of the sponsoring company. Before making this modification, the analyst must consider the ESOP's ability to meet the obligation with its funds. This adjustment can extend to the sponsoring company's balance sheet and be included in its cash flows.

The principal questions are:

- How to quantify the repurchase obligation
- Where to consider its impact in the valuation

To answer these questions, it is important to consider how many shares the ESOP holds in the sponsoring company. The smaller the percentage of ESOP stock

ownership in the sponsoring company, the lower will be the effect on value of the repurchase obligations. As stock ownership by the ESOP grows and the repurchase obligation grows with it, the potential drain of cash flow can negatively effect stock value since the cash flow set aside to satisfy the put requirement could have been used in growing the business, reducing debt, or other critical business purposes.

The put right provision was established to provide plan participants some assurance that they would be able to sell their shares at retirement. In most cases, this right reduces the amount of adjustment for lack of marketability, since the put provision does provide a ready market for the ESOP shares. Some analysts even eliminate the discount.

WRITING A VALUATION CONCLUSION

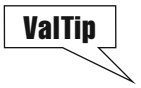
The valuation process is not complete until a written report is furnished to the trustee.

ValTip

To comply with the requirements of the Department of Labor, the analyst's conclusion of fair market value must be presented in a written document.

The DOL states or implies that the valuation report must contain:

- A full description of the asset being valued
- A statement(s) of conclusion of the asset's value
- A statement(s) of the purpose of the valuation
- A statement(s) of the effective date of the valuation
- A statement(s) of the approaches and methods considered
- A statement(s) of the relevance of each methodology employed
- A statement(s) of any restrictions or other limiting condition(s)
- A statement(s) of the factors considered in the formulation of the conclusion of value
- A written assessment of all relevant factors, including those factors cited in Revenue Ruling 59-60
- A statement that all rules of the proposed DOL regulations have been met
- A written assessment of all relevant factors concerning any marketability adjustment(s) and that the put option rights were considered
- A written assessment of all relevant factors concerning any control or minority interest adjustment(s)
- A summary of the qualifications of the appraiser(s)
- Signatures of the appraiser(s) and the date the report was signed
- Statement of independence



The valuation generally is made on at least an annual basis and may be used in several scenarios over which the analyst has little or no control.

A per share value can be extracted simply by dividing the outstanding (considering unallocated or effects of dilution) shares of the company into the aggregate company value. The plan administrator can determine the appropriate reporting of these shares.

The report should be written to the plan trustee who retains the analyst. It does not matter whether the plan or the sponsoring company pays for the valuation services, and the trustee does not have to use the analyst's value estimate. Rather, it is the plan trustee's responsibility to render the final conclusion. The analyst's task is to offer to the trustee a professional estimate of the fair market value of the ESOP shares.

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CHAPTER 16

Valuation in the Divorce Setting

Divorce valuations are completely state specific and are dependent on the specific facts and circumstances of each case. This chapter presents some general, but important concepts, and also references certain state specific cases where an important issue was addressed. For additional information on some of these issues see Chapter 17, Valuation of Small Companies, and Chapter 18, Valuation of Professional Practices.

STANDARDS OF VALUE IN DIVORCE

It is incumbent on the analyst to know what standard of value is appropriate in the valuation of a business or business interest in a divorce. Since this may vary from state to state and from jurisdiction to jurisdiction, the analyst should be aware of the terminology used in the jurisdiction and how that terminology is defined within that jurisdiction. Most often case law within the jurisdiction is the appropriate source for defining the standard of value. Furthermore, the definitions of the standard of value for divorce may differ from the traditional definitions for other areas of valuation which are discussed in Chapter 1.

Value or Fair Value

Some state marital dissolution statutes refer to "value" or "fair value." Fair value is a statutorily or judicially defined standard of value. Historically, fair value has been used primarily in litigation matters involving a marital dissolution or with dissenting minority interest shareholders. When valuing a business using the standard of fair value, the analyst normally considers all elements of a business's value (e.g., income or cash flows, risk-adjusted rates of return, or value of assets in place) with the possible exception of its investment value in the actual marketplace. However, state statutes and case law may affect the normal valuation procedures. For example, in certain states, when valuing a closely held business for purposes of a marital dissolution, case law specifically disallows any discounts for lack of control and/or lack of marketability. "Fair value" and "value" are really only legal terms that must be further defined for the analyst to determine a value for divorce purposes.

ValTip

The analyst must know the specific definition of value that is to be used in determining a value in a divorce setting. Failure to do so could result in the valuation being excluded if challenged. The attorney should provide guidance on the law to the analyst.

Fair Market Value

Fair market value is another often-used standard of value in divorce cases. However, as with fair value, what is called "fair market value" for divorce purposes by a state or jurisdiction often may not be pure fair market value as used for other valuation purposes, such as tax reasons. The analyst should not assume that fair market value is the standard, or if it is the standard, its definition, without getting clarification from the attorney.

Family law courts generally seek to establish equitable valuations and division of marital assets. As such, they often make determinations of value that might seem odd to the analyst who is used to making determinations of pure "fair market value." As previously mentioned, many state dissolution statutes refer to "value" and "fair value" rather than "fair market value." Since "value" and "fair value" are generally legal standards, the courts are given a high level of discretion in the determination of value. Appellate and supreme courts generally are reluctant to overturn valuation decisions of trial courts unless there is a clear abuse of judicial discretion or, more commonly, there is a valuation issue, such as personal versus entity goodwill, that has been handled inappropriately.

Investment Value in Divorce

Investment value is the value of a business to a specific buyer as opposed to the hypothetical buyer assumed in fair market value. When valuing a closely held business using the standard of investment value, the appraiser should consider the specific synergies, cost savings, and other buyer-specific attributes of the target buyer. It is rarely used in a marital matter. However, a "hybrid" investment value is used in some divorce situations. In these cases, an "investment value" standard might be applied to capture the personal goodwill attributable to the owner(s) of the business in the value of the business and in the marital estate. For example, in valuing a medical practice, the analyst might adjust actual physician compensation to the average for the particular specialty, thereby increasing anticipated cash flows. However, the value so determined is not likely to be a fair market value, because a hypothetical buyer may not adjust compensation this way. Some states still might use this hybrid investment value to determine the value of a business for divorce purposes, but the trend is away from this and toward a bifurcation of personal and entity goodwill.

Intrinsic Value in Divorce

Intrinsic value is a standard of value that is used often in reference to publicly traded securities. It might refer to the "pure" value of the security as opposed to its traded value. It might also refer to a breakup value or an underlying asset value. In a divorce setting, this standard, in its defined form, would not be used. However, as in the case of the investment value standard, a hybrid form of the intrinsic value standard might be found in a divorce setting.

PREMISE OF VALUE—GOING CONCERN

Analysts and courts sometimes confuse the "premise of value" with the "standard of value." The two most commonly used premises of value are the *going concern* and the *liquidation* premise of value. When a business is a going concern it will continue to operate in the foreseeable future and not cease operations and liquidate.

The *International Glossary of Business Valuation Terms* defines going concern value as follows:

1. The value of a business enterprise that is expected to continue to operate into the future.
2. The intangible elements of going concern value result from factors such as having a trained workforce, an operational plant, and the necessary licenses, systems, and procedures in place.

Notice that the going concern premise may include intangible assets in the calculation of value, whereas liquidation value may or may not include it. Most divorce courts also will recognize the inclusion of goodwill in the value, but elements of goodwill might be eliminated from inclusion in the marital estate. Therefore, divorce valuations will be made more often under a going concern premise but the conclusion of value might not include all elements of going concern value or goodwill value.

PREMISE OF VALUE—LIQUIDATION

The *orderly* liquidation premise of value assumes that ongoing operations have ceased and that the business's assets will be sold on a piecemeal basis in an orderly manner to obtain the highest possible price. *Forced* liquidation value assumes that the assets will be sold as quickly as possible (i.e., at auction) and almost always results in a lower value than that achieved under an orderly liquidation. Therefore, if liquidation value is used in a divorce setting, the analyst should clearly state whether it is an orderly or a forced liquidation.

A liquidation premise of value would make sense in a divorce setting only in the same instances it would make sense in a nondivorce setting, that is, when the business is actually in a liquidation mode or when the liquidation value of the assets is greater than the income and market approach values for a controlling interest. Since most states intend to provide equity in the determination of the marital estate, the liquidation premise would not usually provide an equitable solution.

GOODWILL—THE BATTLEGROUND FOR DIVORCE VALUATIONS

Goodwill has become the battleground for divorce valuations in the 2000s. How much and what goodwill will be included in a divorce valuation often has a material impact on the total value of the marital estate. Since many marital estates have few assets as valuable as the business or business interest of one of the spouses, the amount of goodwill included in the value of this business/business interest can be critical in determining the total value of the marital estate as well as the relative economic position of the spouses after the divorce. The business is the primary source of funds (i.e., cash) for shifting value from the business owner spouse to the nonbusiness owner spouse. Overvaluation of the business interest can result in an inequitable shift of value to the nonbusiness owner, with possible potential bankruptcy for the business owner. Undervaluation of the interest can result in an inequitable shift of value to the business owner. Goodwill is the determining factor in most of these situations.

DEFINING GOODWILL

Goodwill is a generic term that sometimes is used to include a bundle of intangible assets and sometimes is used only as a single intangible asset (calculated as a residual value) within a bundle of intangible assets.

The *International Glossary of Business Valuation Terms* defines intangible assets as "non physical assets (such as franchises, trademarks, copyrights, goodwill, equities, mineral rights, securities, and contracts as distinguished from physical assets) that grant rights, privileges, and have economic benefits for the owner." It defines goodwill as "that intangible asset arising as a result of name, reputation, customer loyalty, location, products, and similar factors not separately identified."

ValTip

The various definitions and components of goodwill often cause confusion. It is important to fully understand the term's meaning in the context it is being used.

STATE INTERPRETATIONS ON INCLUDING GOODWILL IN THE MARITAL ESTATE

How goodwill is handled in a divorce setting depends on the particular jurisdiction. Some courts never include any goodwill as a divisible marital asset. Wisconsin, for example, in *Holbrook v. Holbrook,* 309 N.W.2d 343,345 (Wis. Ct. App. 1981), held that professional goodwill is too difficult to distinguish from future earning capacity to be marital property.[1]

Other courts always include goodwill as a divisible marital asset, regardless of the nature of the goodwill. In *Dugan v. Dugan*, 457 A.2d 1 (N.J. 1983), the New Jersey Supreme Court held that all goodwill, whether personal or entity, is marital

[1] Also see *Sorenson v. Sorenson*, 839 P.2d 774 (Utah, 1992); *Travis v. Travis*, 795 P.2d 96 (Okla. 1990); *Hickum v. Hickum*, 463 S.E.2d 321 (S.C. Ct. App. 1995).

property because it would be inequitable to ignore the nonpropertied spouse's contributions to the development of that economic resource.[2]

Many states, however, differentiate between "enterprise goodwill" (entity goodwill), which is considered to be a divisible marital asset, and "personal goodwill," which is not.[3]

This emphasizes again the importance of the expert knowing the applicable decisions in the jurisdiction in which he or she is testifying. Some states are equitable distribution states that have alimony; some are equitable distribution states with no alimony; and some are community property states with or without alimony. In some cases the courts might have been influenced by trying to provide equity under their particular state law and in other cases the courts might simply have looked to the decisions in other states to guide their own conclusions. It is clear that the system as constituted leads to wide variations of divisions of marital assets across the various states and jurisdictions. Many of the differences result from the basic state law (e.g., community property versus equitable distribution). Other differences result from interpretations of state law.

ValTip

Since state laws are so diverse the analyst must constantly be alert to not only the espoused standard of value in a particular jurisdiction, but also the variations imposed by judicial decisions. Consultation with an attorney is advised.

PERSONAL VERSUS ENTITY GOODWILL

Personal goodwill has burst onto the scene over the past few years. It is not a new concept but is one that seems to have "caught on" recently in many areas. The most visible emergence is in the divorce arena. A number of states, such as Indiana, Minnesota, and Virginia, have had decisions dealing with the exclusion of personal goodwill from the marital estate.

ValTip

Personal goodwill is that goodwill that attaches to the persona and the personal efforts of the individual. It is generally considered to be difficult to transfer, if at all. Entity goodwill is the goodwill that attaches to the business enterprise.

[2] See also *Prahinski v. Prahinski*, 582 A.2d 784 (Md. 1990); *Powell v. Powell*, 648 P.2d 218 (Kan. 1982).

[3] See *Yoon v. Yoon,* 711 N.E.2d 1265 (Ind. 1999); *Hanson v. Hanson,* 738 S.W.2d 429, 434 (Mo. 1987); *Taylor v. Taylor,* 386 N.W.2d 851 (Neb. 1986); *Beasley v. Beasley,* 518 A.2d 545 (Pa. Super. Ct. 1986).

An individual may not be able to easily transfer his or her personal goodwill to someone else or "take" entity goodwill for him- or herself.

While numerous cases discuss goodwill, very few analyze the methodologies used to distinguish between personal and enterprise goodwill. However, there seems to be consensus that how to divide goodwill is entirely dependent on the facts of each case and the magnitude of the financial impact the hypothetical departure of the propertied spouse will have on the business.

In *Howell v. Howell*, 523 S.E.2d 514 (Va. App. 2000), the husband, a tax law attorney, appealed the trial court's valuation decision of his interest in a law firm, Hunton & Williams. The husband argued that the firm's partnership agreement defined the value of the partnership interest upon termination or death by entitling the partner to receive only the balance of his capital account and his share of the net income. In this case, the two items amounted to $85,614. The husband maintained that the agreement fixed the value of his partnership interest for equitable distribution purposes, and therefore it precluded consideration of whether his interest had additional goodwill value. The trial court, on the other hand, ruled that his partnership interest had goodwill because the firm's agreement made no provision for goodwill. In affirming the trial court's decision, the Virginia Court of Appeals held the following:

- Neither the existence of goodwill nor the method of its valuation is fixed as a matter of law; rather both are functions of the facts of the particular case.
- The trial court accepted the methodology of the wife's expert, the excess earnings method. In the absence of plain error by the trial court, its finding must be upheld.

In *Moretti v. Moretti*, 766 A.2d 925 (R.I. 2001), the trial court held, in part, that the value of the landscaping business owned by the husband included goodwill. The husband appealed the decision, arguing that the trial court erred in its finding that goodwill is included in the value of the business. The Supreme Court of Rhode Island remanded the case in order for the trial court to distinguish between enterprise goodwill and personal goodwill.

In *Yoon v. Yoon*, 711 N.E.2d 1265 (Ind. 1999), the Indiana Supreme Court held that goodwill attributable to the business enterprise is divisible property, but to the extent that goodwill is personal, it is not divisible property. Two important points were addressed in this case:

1. The goodwill that depends on the continued presence of a particular individual is a personal asset.
2. The use of the market approach, more specifically the transaction method, is an appropriate methodology to determine enterprise goodwill.

DIVIDING GOODWILL INTO PERSONAL AND ENTITY COMPONENTS

There are no generally "accepted" methodologies to divide goodwill into its personal and entity components. There are, however, methods that can be used to calculate personal goodwill, which may depend on the particular case or jurisdiction.

One method was implied by the Indiana Supreme Court in its *Yoon* decision, where the court ruled that if the practice (or business) could be "sold or transferred" in a market transaction, that might indicate a value that included only entity goodwill. However, just because an entity is salable, there should not be a presumption that the goodwill embedded in the sales price is 100 percent entity goodwill and 0 percent personal goodwill. Depending on the jurisdiction, this distinction may be affected if the selling owner executes a noncompete agreement.

Another method is to analyze the various factors that pertain to entity versus personal goodwill and then use those to allocate total goodwill into the appropriate proportions of each. The most widely cited case that indicates the factors to be considered when valuing professional (i.e., personal) goodwill is *Lopez v. Lopez*.[4] The factors determining the amount of personal goodwill were:

- Age and health of the professional
- Professional's demonstrated earning power
- Professional's reputation in the community for judgment, skill, and knowledge
- Professional's comparative professional success
- Nature and duration of the professional's practice, either as a sole proprietor or as a contributing member of a partnership or professional corporation

In addition, these factors can be relevant in determining personal goodwill and thus in allocating the goodwill between personal and entity goodwill[5]:

- Marketability of the practice
- Types of clients and services
- Location and demographics
- How the fees are billed
- Source of new clients
- Individual practitioner's amount of production
- Workforce and length of service
- Number of other professionals in the community competing in the same service or specialty

Even though this method is subjective, it still presents a practical solution to the allocation of goodwill problem. No empirical studies provide a baseline against which specific goodwill might be measured.

ValTip

If analysts present their case well and support the allocations with sound logic, the court will be more likely to accept their value conclusions as a reasonable approximation of the personal versus entity goodwill.

[4] *In re Marriage of Lopez*, 113 Cal. Rptr. 58 (38 Cal. App. 3d 1044 (1974)).
[5] Robert E. Kleeman, Jr., R. James Alerding, and Benjamin D. Miller, *The Handbook for Divorce Valuations* (New York: John Wiley & Sons, Inc., 1999), p. 79.

APPLYING THE FACTORS TO SEPARATE GOODWILL

Age and Health of Professional

The age and health of the practitioner are important issues in the determination of goodwill. Practitioners close to retirement may have lower personal goodwill because their expected future earnings will not continue much longer. If practitioners have health problems that hamper their performance, personal goodwill is lower.

Earning Power

Another consideration is the expected future earnings of the practitioner and the practice. Demonstrated past earning power can be an important part of expected future earnings. If supposed goodwill elements (e.g., a recognizable practice name or a good business reputation) do not result in future earnings, then there may be no goodwill value. The higher the future earnings, the higher the possible goodwill value. The key to assessing the amount of goodwill is to determine the factors generating the future earnings that also might be related to goodwill. For example, if the level of earnings is due to the fact that the practitioner works substantially more hours than similar practitioners, then the goodwill value derived likely will be personal and not entity goodwill. If the future earnings will be a result of the fact that the practice is the only one of its kind in a 50-mile radius, then the goodwill may be more entity goodwill.

Reputation

A practitioner's reputation for judgment, skill, and knowledge is vital to goodwill. The background, education, and skills of the practitioner play a large part in assessing the level of goodwill. These qualities are what keep clients coming back and referring new clients.

Comparative Success

Another means of assessing reputation/goodwill is to analyze the success of the professional and the practice in light of the success of other similar professionals and practices. "Success" usually is measured by earnings of the practice, but other factors, such as hours worked, clients/patients seen, and standards of living, also play a role. Surveys of earnings also can be considered.

Duration

The duration of the practice is important to consider as well. The length of time the practice has been in operation has an effect on the goodwill because goodwill is built over time.

Marketability

The marketability of the practice is another factor that can help determine the existence of entity and personal goodwill. Demand for the practice determines mar-

ketability, although market demand may not be as much for the specific practice as for the type of practice specialties it represents. For example, if there is a entity wanting to purchase a large number of medical practices, then the market demand for these practices is going to rise and the entity goodwill of specific firms will increase, perhaps beyond the level warranted under more normal circumstances. Another factor, ease of entry into a particular field, may lower the level of entity goodwill. If everyone can do it, then it is replaceable, not unique.

Types of Clients and Services

The types of patients and clients also play a role in the valuation of goodwill. For example, in a medical practice, how does each patient pay for services? Do most use some form of insurance? Are some of the patients involved in Medicare or Medicaid? All these issues could play a part in the bifurcation of personal and entity goodwill.

Location and Demographics

The location of the practice plays a vital role in goodwill determination. Some locations are more desirable than others. If a practice is located within a short travel distance for clients, it may have higher practice goodwill than a practice located an hour away. The demographics of the area where the practice is located are important as well. The people who live in the area, the health of those people (in the case of a physician practice), and the quality of life are all-important factors.

Location of the client might not be as important for law and accounting practices except in smaller communities.

As in most valuation situations, nothing is as simple as it seems and everything depends on the facts and circumstances of the engagement. For example, let's say a physician in his early forties died suddenly of a massive heart attack. He had been in a solo primary care practice but had shared office space with three other physicians. His practice was in a very high-income, high-growth area with many other primary care physicians in the area. Ordinarily, the deceased physician's practice might have a high entity goodwill because of the location and demographics. In fact, the opposite was true. Because he shared offices with three other physicians, and because the area was growing so rapidly and had a high per-capita income, the practice could not be sold at any price. The physicians who office shared with the deceased physician simply took over the patients. Therefore, any goodwill that had existed in that practice was personal goodwill. Even though this was not a divorce case, and certainly the death of the physician had some impact on the ability to transfer value, it is a clear example of how factors such as location and demographics can be deceiving with regard to their impact on personal versus entity goodwill.

Fees

Another factor to consider is the fee schedule of the practice. How does the practice charge its clients, by procedure performed or by amount of time spent on each client? Other considerations may include the impact of the increase or decrease of fees on the practice. Would clients leave or stay if the fees were changed? Are clients willing to pay high hourly fees because of the practitioner/owner providing the service?

Source of New Clients

The referral base, as a steady source of new business, is one of the most important considerations in the valuation of goodwill. If the referrals of the practice are coming from a large number of current clients, the practice may have more entity goodwill than one that relies on referrals from a small client base or from other professionals. If referrals generally are made to individuals within a practice instead of to the practice as a whole, personal goodwill is likely to be higher. For example, in valuation practices, especially those with a high level of litigation cases, the referral sources might refer to the particular analyst because of his or her ability to testify. If that individual is no longer with the practice, the goodwill relating to those referrals is likely to leave with him or her. Additionally, if the particular "expert" retires or signs a noncompete agreement, the goodwill related to that expert's business may still not be able to be transferred to the entity.

Production

The practitioner's work habits are also important. How many hours a week does the practitioner work? Does the practitioner spend a lot of time with each patient or client, or does he or she work on several patients or clients at a time? A practitioner who spends more personal time with patients is likely to increase his or her personal goodwill, but the practice goodwill may decrease due to the time spent on each patient as opposed to other patients. In addition, a practitioner who works more than the "average" schedule for the practice specialty may accrue a higher level of personal goodwill.

Workforce

The workforce of the practice also should be considered. When a professional practice sells to a new buyer, repeat customers want to see the familiar faces of the support staff.

Nonowner professionals who are involved in the practice also may hold the goodwill of some clients. If they were to leave the practice, the clients might leave with them.

ValTip

Analysts should consider the number of employees, the job titles and job descriptions, the pay scale, and the length of service.

The impact of nonowner professionals on the base value is a consideration of value prior to the bifurcation of goodwill. Such issues as noncompete agreements and their enforceability (with the nonowner professionals) are considerations in determining the base fair market value of the professional practice.

ValTip

The issue of nonowner professionals and their impact on value is one that moves beyond the issue of separation of personal and entity goodwill. In determining the fair market value of a professional practice, the issue of control of clients, patients, and customers is one that relates to the transferable value of the practice without just the consideration of personal and entity goodwill of the owner.

Competition

The degree of competition, such as the number of other professionals with similar specialties in the same geographical location, the reputation of the competition, and the number of patients/clients seen by the competition will affect the levels and types of goodwill present.

ROLE OF NONCOMPETE AGREEMENTS IN DETERMINING PERSONAL VERSUS ENTITY GOODWILL

Some would argue that valuing a noncompete agreement would result in the value of personal goodwill. The purpose of a noncompete agreement is to prevent the covenantor from exercising his or her personal skills to generate value to any entity other than the current one. The value of the entity that is left after deducting the value of a noncompete agreement is the value a buyer would pay in the marketplace for the entity without the skills of the covenantor and with the covenantor competing. As in all other issues dealing with personal goodwill, using a noncompete agreement is not a perfect solution but it may provide some guidance.

A practical methodology for valuing a noncompete agreement in a professional practice consists of determining the probability of competition on a yearly basis over a certain period of time and identifying the profits attributable to the seller. In constructing the forecasts of these profits and taking into account the probability of competition, the analyst needs to consider the elapsed time before competition starts, the potential buyer's response, and the adjustment of years after year 1 for the multiplicative effect of the probability.[6]

Another method of determining the value of a noncompete agreement is to examine factors considered by the courts in determining the economic reality of a

[6] *Id.* at p. 10.

covenant and using those factors to construct a model to determine covenant value. In *Thompson v. Commissioner,* T.C. Memo 1997-287 (June 24, 1997), the Tax Court concluded to the value of a noncompete agreement, using an 11-factor "economic reality test." These factors included probability of competition, length of the covenant, and ability of the individual to compete. They were used in tandem with estimates of the amount of revenue and income the departure of the covenantor could impact to determine the value of the noncompete agreement. Unfortunately, this method is still subjective, and some of the factors may fail adequately to measure the full impact of personal goodwill. For example, one of the assumptions, the length of the covenant, might result in some personal goodwill value being excluded if the covenantor will compete successfully *after* the covenant period has expired. See Chapter 20 for a more detailed explanation and example of the value of a covenant not to compete.

In valuing personal goodwill, the analyst should look into whether the individual has executed a noncompete agreement (stand-alone or within an employment agreement) with the business entity and his or her ability to change such an agreement. Some analysts consider the execution of a noncompete agreement to be equivalent to the individual having "transferred" his or her personal goodwill to the entity. To date, this theory has not been fully tested in court.

PERSONAL GOODWILL IN COMMERCIAL BUSINESSES

A controversy has emerged in some jurisdictions regarding the measurement of personal goodwill for a commercial business owner compared to a professional practice owner. Traditionally, the issue of personal goodwill arose almost exclusively in the context of the professional practice owner. However, some analysts and attorneys have presented this concept in the nonprofessional arena. There is no doubt that there is substantial personal goodwill in a professional practice, particularly in one- or few-owner professional practices. The line gets fuzzy in the commercial business arena. Even if a commercial business has one owner, it may be difficult to attribute much value to personal goodwill.

For example, in *Frazier v. Frazier*, 737 N.E.2d 1220 (Ind. App. 2000), the business being valued was a single-location retail furniture store. While the propertied spouse's attorneys claimed that most of the goodwill was personal, the facts were that very little of the value, if any, could be attributed to the owner. He did not have any special relationship with the customers who came from the general public, and he had no special relationships with suppliers. While a buyer would insist on a noncompete agreement, it would really have value only to keep the owner from a "suicidal" attempt to compete in a nearby location. In this case there was no real personal value to the business.

ValTip

The arguments set forth by proponents of a personal goodwill element for commercial businesses sound similar to a key-person discount.

RESTRICTIONS ON DATA

In certain situations, the analyst may find that access to some company data and company management is restricted in some manner. In determining which valuation approach is most applicable, the analyst must keep in mind the unavailable data and what impact it could have on the conclusion of value. This situation occurs often in divorce situations, especially where the business owner spouse is purposely uncooperative.

RANGE VERSUS SPECIFICITY

Generally, divorce decrees specify amounts of marital assets (identified in dollars) allocated to each spouse. The amounts are specific (as indicated) instead of a range of amounts. Therefore, the valuer in a divorce situation will normally be asked to determine a specific amount of value instead of a range of value.

PROFESSIONAL STANDARDS IN A DIVORCE SETTLEMENT

The role of professional standards in divorce valuations is increasing in importance as judges and attorneys become more sophisticated and knowledgeable about the business valuation profession. Experienced attorneys often look for accredited valuation analysts, and many judges give more credibility to their opinions than to those who are not accredited. Additionally, analysts have a responsibility to avoid conflicts of interest and to remain independent in order to render their expert opinion.

ROLE OF THE USPAP

The Uniform Standards of Professional Appraisal Practice (USPAP) are discussed in Chapter 10. The purpose here is to explain the role of USPAP in a divorce setting. The standards have their roots in the regulation of real estate appraisals in federal transactions. They are used in divorce valuations generally only in relation to the analyst presenting the case in the divorce matter. If the analyst is a member of an organization that requires compliance with USPAP, then he or she should prepare a valuation that complies with USPAP. However, marital courts generally do not make USPAP (or any other business valuation standards) mandatory for acceptance in the determination of a value conclusion. The analysts might be challenged by the ethics committee of the organization requiring compliance where USPAP is not followed, but it generally will not change the decision of the court. Noncompliance is not generally an issue on which an appeal of a value may be based.

ValTip

Notwithstanding the fact that compliance with USPAP is not a requirement for an acceptable value for divorce purposes, the cross-examining attorney can nevertheless use noncompliance as a tool for impeachment.

AICPA STANDARDS

As of early 2003, the American Institute of Certified Public Accountants (AICPA) was developing a separate set of standards relating specifically to business valuation. It had appointed a task force to develop standards, which should be promulgated by 2003. Once promulgated, it is anticipated that certified public accountants who prepare business valuations for use in a divorce litigation will follow those standards. Those currently performing business valuations must abide by the appropriate general standards of the AICPA. See Chapter 10 for additional information on standards.

OTHER STANDARDS

The American Society of Appraisers (ASA), Institute of Business Appraisers (IBA), and the National Association of Certified Valuation Analysts (NACVA) have all developed standards to be followed by their members. The ASA standards are detailed enhancements to USPAP, which the ASA had previously adopted as a requirement for their members (recently changed). Therefore, a member of ASA offering an analysis or report of value in a divorce litigation will often comply with both USPAP and the ASA separate business valuation standards.

The IBA and NACVA also have developed business valuation standards that require compliance from their members. See Chapter 10 for additional information on standards.

Noncompliance to standards does not necessarily invalidate the valuation report for the court (that decision is up to the judge), but it can provide fodder for cross-examination.

DAUBERT CHALLENGES IN DIVORCE

The *Daubert* type challenge for impeaching expert witnesses has not yet become widespread in divorce litigation, probably, in part, because the challenging attorney might be challenging an expert used in the past or one who might be used again in the future. In many locales, family law attorneys are a close community, and they tend to use a smaller group of analysts. If they begin presenting *Daubert* challenges against these experts, and succeeding, their pool of experts will diminish. It took a long time for *Daubert* to become an accepted concept in commercial litigation, but it generally serves its purpose in weeding out nonqualified "experts." While it might take a while longer, *Daubert* challenges will most likely find their way into divorce litigation as well. See Chapter 22 for additional information on *Daubert*.

VALUATION METHODOLOGY AND THE APPLICATION OF DISCOUNTS IN DIVORCE VALUATIONS

Generally, and depending on state laws or judicial precedent, once the analyst has determined the appropriate value before discounts, the discounts to be applied and the method of applying them is determined as in any other valuation. Therefore, if a minority interest is being valued in a divorce setting, the analyst likely would determine a minority marketable value (depending on the valuation method) first and then apply a discount for lack of marketability. In arriving at the minority value using the income approach, the analyst might use the minority cash flows to determine the minority value, as in any other valuation. When using the asset approach, the analyst might have to determine and apply a minority interest discount to arrive at the minority marketable value. Again, the level of the discount is normally arrived at as it would be in any other valuation.

AVOID DOUBLE COUNTING

Because of the unique aspects of divorce valuations in some jurisdictions, the possibility of double discounting arises. For example, in a jurisdiction where personal goodwill is excluded from the value of a business interest, whether or not to take an additional discount for marketability may be a double counting issue. In other jurisdictions, when an intrinsic value is used and includes all personal and entity goodwill, a marketability and/or minority discount might not be appropriate under the particular definition of intrinsic value. The analyst should consult with the attorney about the proper application of the law.

WHEN AN INTEREST IS CONSIDERED CONTROL IN A DIVORCE SETTING

As is true in so many other issues in divorce valuation, whether an interest is control in a divorce setting is often an issue of jurisdiction. In most jurisdictions, the interests of both spouses are aggregated to determine whether the interest should be valued as a control or a minority interest. For example, if the husband owns 40 percent of a business and the wife owns another 20 percent of the same business, most jurisdictions will merge the two and include the value of a 60 percent interest in the marital estate. The primary reason for this is that the courts generally consider marital assets, including business interests, to be fungible (i.e., one asset can be freely substituted for another). Furthermore, the entire business interest included in a marital estate usually is given to one spouse or the other. The spouse not receiving the business interest receives an equivalent value (stated in dollars) of other marital assets. Thus, in the example, if the wife is the active party in the business and receives the entire 60 percent interest owned by the marital estate, she is receiving a control interest. To value those interests as two minority interests of 40 percent and 20 percent and apply minority and related lack of marketability discounts would understate the value of those interests and result in the non–business owner spouse (in this case the husband) receiving a less than equivalent share of other assets in the division of the marital estate.

If the judge decides for a variety of reasons to give one spouse, say, 25 percent and the other spouse 35 percent, then a question of whether to use a control or a

minority value does arise. It may be appropriate in such a case to use a minority value for the spouse not active in the business. As to the spouse remaining active in the business, the most likely scenario may be also to use a minority value. However, the facts of the situation should be examined to see if the active spouse has effective control.

FAMILY AGGREGATIONS IN DIVORCE SETTINGS

There is often no rationale for aggregating family interests in a divorce valuation setting to determine whether an interest is a control or a minority interest. For example, if the business owner spouse is a 25 percent owner in a company in which he or she is active along with his or her three siblings, should the interest of the divorcing spouse be considered a control interest because of the ownership of the other interests by siblings? In the tax valuation arena, despite years of trying to aggregate these family interests, the IRS finally acquiesced and agreed that they should not be aggregated since the standard of fair market value would not contemplate such aggregation.

Notwithstanding, many divorce courts have taken the position that family interests should be aggregated. This decision usually is grounded in the theory of "equity" that maintains that the non–business owner spouse is at a disadvantage by not being part of the family that owns and operates the business asset and needs additional consideration.

PARTNERSHIPS, LLCs, LLPs, AND FAMILY ENTITIES IN A DIVORCE SETTING

Minority interests in pass-through entities often are found in marital estates. Often the other interests are not owned by family members but by nonrelated parties or by business partners. Again, some marital courts may look at the interest as a control interest when the other interests are owned by business partners of the owner-spouse. The equity theory once again comes into play because some courts believe that business partners would tend to "take care of" each other. Again, the analyst should consult with the lawyer on the appropriate legal application.

The interests that the courts consider controlling by aggregation are often in entities that hold the real estate used by the company owned by the same individuals. While the court may look at the corporate interest as a minority interest, it may turn the underlying real estate interest into a control value. In such a case, the analyst should stick to the principles of the standard of value to be used in the jurisdiction.

In many instances, the pass-through entity being valued is a family entity such as a family limited partnership (FLP). A minority holder in such an entity usually has no control over distributions and no rights to the underlying assets. If that person is not a controlling general partner, the realities are that he or she truly has no control. Some courts tend to take the approach that such family entities are established for the purpose of limiting or reducing the value for tax or marital purposes. However, that does not change the facts of the situation, that a minority interest in the entity simply has no ability to exercise any control elements.

To not apply the same discounts that would be applied in a nondivorce situation ignores the legal and economic realities of the situation. However, courts sometimes ignore such realities and make determinations that can cause severe financial

problems to both parties in the divorce. Unless the jurisdiction has determined specifically that the interest should be valued as a control interest, the analyst should apply discounts to the extent they would be applied in any other valuation situation. Furthermore, since family members do not have a legal obligation to "transfer" part of their value in the FLP to the spouse being divorced by a family member partner, there may not be a reason to apply a lower level of discount due to the family relationships.

LIQUIDITY MYTH IN PASS-THROUGH ENTITIES

Marital courts sometimes stress equity instead of economic reality in judging the value of an interest in a pass-through entity. The resulting overvaluation of the interest creates the liquidity myth, that is, the spouse left holding the entity does not have sufficient liquid assets to satisfy the award of the court in dividing the supposed value of the marital assets. The result is a disservice to both spouses since often the court's decision will have to be modified to resolve the disparity between the parties.

The theory espoused by some courts, that the family or business partner interests should be aggregated in determining value, feeds into the liquidity myth. As previously indicated, neither family nor business partners are under any obligation to provide liquidity from the pass-through entities. As a result, the spouse holding the pass-through entity interest will not have either cash flow or sale value of the interest sufficient to satisfy the obligations of the dissolution. It is the analyst's responsibility to determine the proper value of these entities in accordance with the standards for business valuation and the local law.

DIVORCE VALUATION AND BANKRUPTCY

Because of the liquidity myth, business interests valued in a divorce setting sometimes end up being valued again in a bankruptcy court. This section deals with the correlation between value in the divorce proceeding and a possible later valuation in the bankruptcy court.

Liquidity Myth Revisited

The lack of liquidity to a spouse who owns the interests in pass-through entities can result in that spouse filing for bankruptcy. Once that happens, the interest might be valued again in that court. At the very least, the interest might be offered for sale by the trustee in bankruptcy, where the economic realities surrounding the interest are more likely to be recognized than in the marital courts.

Valuing Pass-Through Entities in a Bankruptcy Court

An interest in a pass-through entity (including a family limited partnership) is not immune to the claims of creditors in a bankruptcy estate, subject to the rules and restrictions of the Bankruptcy Code and state law.

The Bankruptcy Code exempts payments to a former spouse for alimony or maintenance from discharge. The challenge is determining what is alimony and maintenance and what is property division. If the bankruptcy court determines that an obligation resulting from a divorce decree is for alimony or maintenance, it could

refuse to discharge the obligation. The result could be that the cycle is repeated. If the bankrupt spouse comes out of the bankruptcy still holding the pass-through entity but not being able to discharge the obligation to the former spouse, he or she might still be trapped in the liquidity myth and end up back in bankruptcy court at a future date.

SUMMARY

Divorce valuations are very state-specific. However, we have presented many general nuances particular to valuations prepared in a divorce setting. For further information see *The Handbook for Divorce Valuatio*n by Kleeman, Alerding, and Miller (New York: John Wiley & Sons, Inc., 1999), which was used with permission as part of this chapter.

CHAPTER 17

Valuation Issues in Small Businesses

WHAT IS A SMALL BUSINESS?

A small business is frequently defined as a business with less than $5 million in revenue. Such businesses usually are owned by individuals, family members, or employees, and are likely to be highly dependent on the owner/manager. They also tend to have lower-quality financial statements and less access to capital than larger businesses. Buyers of small businesses often expect to be involved in day-to-day management of the business and are very concerned with lifestyle issues. Higher risks are associated with these small businesses.

Lack of Management Depth

Small businesses often have a high degree of reliance on one or more key owner/managers. In extreme cases, the business may rely on a single person for sales, technical expertise, and/or personal contacts and may not be able to survive without that person. Professional middle managers are a luxury that small businesses seldom can afford. To be profitable, small businesses must operate with a very thin management group. In addition, leaders of small businesses frequently are entrepreneurs who are not comfortable with delegation of management duties to others and may not work well with middle managers.

Small companies are apt to have a board of directors composed of insiders—members of the owner's family and/or employees. Thus they lack the diverse expertise and perspective outsiders can bring to a board of directors.

Lower-Quality Financial Statements

ValTip

Small businesses tend to have lower-quality financial statements that are less likely to have been prepared by an outside accountant. Their statements tend to be tax oriented rather than oriented to stockholder disclosure as in larger companies.

If an outside accountant prepared the subject company's financial statements, the quality of the financial statements will depend on the extent of the work done by the

accountant. The reliability and completeness of accounting information decreases as one goes from audited to reviewed to compiled financial information. In an audit, the accountant has done extensive analysis and testing and has prepared footnote disclosures and a complete set of financial statements. Likewise, in an audit, the accountant expresses an opinion or disclaims an opinion on the fairness with which the financial statements represent the financial position, the results of operations, and the changes in financial position. In a review, on the other hand, the accountant has performed fewer procedures and offers less assurance, indicating only that no material modifications should be made to the financial statements for them to be in conformity with generally accepted accounting principles (GAAP). In a compilation, the accountant pulls together financial information for the subject company, does no testing or analysis of the financial information, and may not prepare footnote disclosures. Compiled financial statements are management's representations and the outside accountant provides no assurance on the statements. Small, closely-held companies often do not have a reason to go to the expense of having an audit or a review. If the subject company has compiled financial statements, the analyst should make more inquiries and do more analysis to ascertain the reliability of the financial information. In addition, it is likely that adjustments may be necessary to bring the financial statements closer into conformity with generally accepted accounting principles or to derive cash flow.

When subject company financial statements are prepared internally, it may be important to inquire about the qualifications of the person responsible for preparing them. Some internal accountants have a strong background in accounting and prepare reliable financial statements on a timely basis. Others have no background in accounting. Overall, small companies usually have less internal accounting expertise than large companies.

Whereas large companies usually keep separate records for the preparation of tax returns and generally accepted accounting principles financial statements, small businesses that have no outside owners have no reason to go to the expense of maintaining separate records for tax and book purposes. Thus, their financial statements tend to reflect a bias toward minimizing income and taxes. The statements are often not in accordance with GAAP and applied on a consistent basis. Accruals of such items as wage-related expenses and warranties may be missing. Cut-off of sales and expenses may not provide for proper matching of revenues and expenses in the same period. Many small businesses utilize cash basis rather than accrual basis accounting. As a result, financial statements may not include accounts receivable, accounts payable, and various GAAP accruals. Finally, small companies are likely to have a number of related party transactions, and owner discretionary expenses may be high. These characteristics of small business financial statements may increase the number of adjustments necessary in the valuation process.

For valuation assignments adjustments from cash basis accounting to accrual basis accounting are common among the smallest companies. Other adjustments to place the statements more in compliance with generally accepted accounting principles are also more likely in small companies.

Less Access to Capital

Small businesses have less access to capital than larger companies and often must rely on capital infusions from the owner family and/or owner employees. Access to debt capital is also more limited because of the higher risk of smaller businesses. The cost of borrowing is higher, and the owner usually must personally guarantee debt. Many small businesses operate with little or no debt, reflecting their limited access to debt capital and a frequent reluctance of owners to take on the risk of substantial debt. Many small business owners minimize debt to reduce risk during economic downturns and to increase the probability of keeping the business in the family.

Other Operational Characteristics

Small businesses can lack diversity in products, markets, and geographic location. Frequently they are very dependent on a few key customers, as when a small manufacturing company primarily produces parts for a single automobile manufacturer. They also may be dependent on a key supplier, as when a manufacturer's key raw material is a by-product of a single large local manufacturer.

Small businesses may have difficulty competing for employees. They may not be able to offer competitive benefit packages and may be in less desirable locations. Good managers may perceive less opportunity for promotions because of the company's small size and the owning family's dominance of top management positions.

Small businesses can be less informed about their market and competition. They are seldom in a position to pay for sophisticated market studies. Knowledge of markets and competition must come from the experience of a relatively limited number of managers—quite often the experience of a single person. Trade associations supplement this personal knowledge of the market. Thus small businesses operating in industries in which the trade associations are strong may be at less of a disadvantage.

In small companies, the portfolio of operations or products frequently reflects the interests and contacts of a particular owner. Sometimes these operations or products have few synergies, and the portfolio may have little appeal to potential buyers.

Higher Risk

ValTip

The characteristics of small businesses tend to result in overall higher risk than is found in larger businesses. These characteristics tend to be extreme in the smallest of small businesses. Risk tends to increase as size decreases.

FINANCIAL STATEMENT ADJUSTMENTS

Financial statement adjustments are an important part of the valuation process with any company (see Chapter 3). These adjustments may include:

- Adjustments of the financial statements to GAAP basis accounting, including adjustment from cash basis to accrual basis
- Normalization adjustments to eliminate nonrecurring revenues and expenses from the financial statements
- Adjustments for unrecorded assets and liabilities
- Adjustments to make the subject company more comparable to others and itself over time to facilitate financial analysis
- Adjustments for nonoperating assets and/or liabilities and related revenues and expenses
- Adjustments for discretionary owner items

Small business financial statements tend to require more adjustments during the valuation process, especially for GAAP type issues and for owner discretionary items. It is important to consider the impact of adjustments on both the income statement and the balance sheet. As adjustments are made, it is also important to consider the possible tax effect of the adjustment, if warranted or applicable. Some types of adjustments apply when valuing either control or minority interests. Other types of adjustments apply only when valuing control interests.

GAAP Adjustments

Common GAAP balance sheet adjustments include adjusting receivables for collectibility, inventory for obsolescence, and fixed asset depreciation from accelerated tax methods to economic depreciation. Some analysts adjust fixed assets to appraised value. GAAP income statement adjustments include adjusting revenue and expenses for proper cutoff.

GAAP adjustments also include converting from cash basis accounting to accrual basis accounting. Cash to accrual adjustments to the income statement require recording revenue when earned rather than when the cash is collected and recording expenses when incurred rather than when paid in cash. Cash to accrual adjustments to the balance sheet include recording accrued assets and liabilities not found on a cash basis balance sheet—accounts receivable, prepaid expenses, accounts payable, and other accrued assets or liabilities.

Normalization Adjustments

Normalization adjustments include the removal of nonrecurring revenue and expenses to get a better understanding of the earnings expected in the future. Common nonrecurring items that may require adjustment include:

- Gains and losses on disposal of assets
- Income and losses from discontinued operations on the income statement and the related assets and liabilities on the balance sheet
- Settlements and payments due to lawsuits
- Losses due to an unusual natural disaster, such as flood damages not covered by insurance
- Funding of the retirement of a longtime owner/manager, which reflects a lump-sum payment for past service (it may be appropriate not to eliminate this item but to spread the expense over a period of years)

Unrecorded Assets

As discussed previously, when the subject business uses cash basis accounting, there may be a number of unrecorded assets. In companies that use accrual basis accounting, off-balance sheet assets may include favorable judgments in lawsuits against others. They may also include intangible assets—the customer list, an assembled workforce, technical expertise, trademarks, goodwill, and the like.

Analysts often adjust the balance sheet only to net tangible asset value, omitting intangible assets. The reason for this is that, to determine intangible asset value, one can first compare the expected future earnings of the business with the expected return on its net tangible assets to determine if the business has any intangible assets. Then one can determine what intangible assets exist and value each intangible asset separately. If the analyst concludes that intangible assets exist and the objective of the valuation is to value an ownership interest in the business as a whole, the analyst usually will turn to an earnings or a market method to value the tangible and intangible assets of a business together. In such situations, it is usually not cost effective to identify and value each intangible asset. Usually it is worthwhile to value individual intangible assets only when the purpose of the valuation is to determine the value of individual assets, such as in a purchase price allocation.

Unrecorded Liabilities

Unrecorded liabilities include cash to accrual basis adjustments, such as recording accounts payable and various accruals. Even businesses using accrual basis accounting can require adjustments to record accruals for items such as warranty expense for products and vacation expense for employees. Accruals also may be necessary to comply with governmental regulations, such as environmental remediation actions and modifications to the workplace environment to meet requirements of the Occupational Safety and Health Administration (OSHA). Unrecorded liabilities also include contingent liabilities, of which lawsuits against the business are a common type.

Adjustments to Improve Comparability

It may be necessary to make certain adjustments to improve comparability of the subject company to industry norms, publicly traded companies, or companies involved in market transactions considered in the valuation process.

For example, if the subject company uses last-in, first-out (LIFO) accounting and the industry standard is first-in, first out (FIFO) accounting, both the subject's inventory on the balance sheet and cost of goods sold on the income statement may be adjusted to FIFO before comparison to industry norms. Adjustments also may be necessary to compare trends within the company if accounting methods changed during the period analyzed.

Nonoperating Assets and Liabilities

Small businesses frequently have nonoperating assets and liabilities. Owners often retain cash or other forms of working capital in excess of business needs, have investments in securities or land within the business, or purchase assets in the pursuit of a personal interest (e.g., antique cars or art). Items such as excess cash and investments reflect the aversion of the small business owner to financial risk, the desire to minimize taxes, and the frequent lack of perception of a line of demarcation between business and personal assets. When adjusting for nonoperating items, it is important to consider both their balance sheet and income statement impact. For example, when adjusting for a nonoperating item such as a vacation home, it is important to adjust for related expenses (e.g., insurance and maintenance) and related income (e.g., rental income).

Discretionary Owner Items

The small business may also pay higher than market rate compensation to the owners and family members. The business may pay discretionary personal expenses for things like country club dues and vacation homes for the owner(s). Transactions with related parties, such as leases, may be at rates above or below market. High owners' compensation and perquisites are not necessary to the operation of the business, and cost savings on related party transactions would not be available to another owner.

ValTip

When valuing a control interest in a small business, it is appropriate to adjust for discretionary items. When valuing a minority interest, it may not be appropriate to adjust for discretionary items because the owner of a minority interest is not in a position to change these items. However, a minority shareholder may be in a position to force an adjustment as an oppressed shareholder.

QUALITATIVE FACTORS AFFECTING VALUE

Qualitative factors such as management depth, stability of the workforce, and expertise affect the value of any business. Certain qualitative factors are specific to small businesses. In reality, the buyers of such businesses may be buying themselves a job and a family lifestyle. Therefore, they may evaluate the attractiveness of a business differently from buyers of larger businesses who may be concerned only with return on investment. For example, a retail store in a downtown area that is open only on weekdays may sell for a higher price than a similar business in a mall that is open seven days a week and evenings. The price difference is due to the impact of these hours on the owner's personal and family life. Other very small businesses, such as bait shops, may sell for higher multiples of earnings because buyers perceive an opportunity to convert a hobby into a job.

Small businesses requiring strong technical expertise may sell at lower prices because few potential buyers have the requisite skills. Where there is a large pool of potential buyers, prices tend to be higher. There tends to be a large pool of buyers for manufacturing companies, because they can be more stable than service businesses and have substantial tangible assets that can be financed. This relatively large potential pool of buyers tends to increase prices.

ValTip

Business brokers can provide insight into the qualitative factors being considered in a particular market.

VALUATION METHODS

Accepted methods for valuing closely held companies include asset, income, and market approaches. Theoretically, the value of a company is the present value of expected future benefits—usually earnings, cash flow, dividends, or capital appreciation to be realized at a later date —that will accrue to the owners. Valuation methods are discussed in detail in other chapters, and the basic principles remain the same when valuing small businesses. The characteristics of small businesses affect the application and relevance of these methods to small businesses. One method—using owners' discretionary cash flow—is usually relevant only for small businesses.

Asset Approach Valuation Methods

Overall, small businesses have a high failure rate, and many existing businesses may be in precarious shape. For small businesses with low earnings or losses, net tangible asset value—the market value of assets minus the market value of liabilities—may be the best indication of value (See Chapter 7).

It is important to define the premise of value. Is the business expected to continue operations, with going concern being the appropriate premise of value, or is the business likely to be terminated, making orderly liquidation or forced liquidation the appropriate premise of value? If real property or machinery and equipment appraisals are used in the valuation of the business, it is important to be sure that these appraisals use the same premise of value.

Although the book value of real estate is often less than its market value, other assets of small businesses may have book values significantly greater than market value in liquidation. The market value of computers and software drops precipitously after purchase. Other assets commonly held by small businesses—such as certain used equipment and office furniture—is available in abundance in some areas of the country, and this oversupply may result in very low values in liquidation. Thus the value of a struggling small business may well be less than book value.

Income Approach Valuation Methods

Income approach methods, particularly capitalized cash flow or earnings and discounted future cash flow or earnings, are just as important in valuing small businesses as in valuing large businesses (see Chapters 4 and 5). Small businesses are less likely to have reliable projections because of a lack of financial expertise. Buyers tend to be more skeptical of their earnings projections because of lower-quality historical financial statements. When using projected future earnings, the analyst must consider whether projected revenue and earnings represent a fantasy as to how the owners of the company think it ought to perform or how they expect the actual company to perform. If the company has a record of meeting budgets and projecting accurately in the past, more reliance can be placed on projections in the valuation process. Since most small businesses have little or no budgeting experience, it may be difficult to get good projections.

Buyers of very small mom-and-pop businesses also expect future earnings to be the result of their own efforts and often are unwilling to pay a price based on projections that they have to make happen.

ValTip

Earnings in the latest 12 months and average earnings in recent years tend to be given the most weight in establishing prices for these smallest businesses. Capitalization of earnings/cash flow is often an appropriate method for valuing these small businesses.

Manufacturing companies and other small businesses at the larger end of the spectrum of small businesses are more likely to be sold based on projections of future earnings than the smaller mom-and-pop operations. They are more likely to have some financial expertise and are usually more stable. Buyers are more willing to place reliance on their financial projections. Thus the discounted future cash flow or earnings method, which involves discounting a projected stream of future cash flow or earnings, can be an appropriate valuation method for these small businesses.

Market Approach Valuation Methods

This approach (see Chapter 6) requires the appraiser to research available sources of information to find similar investments. It can be very difficult to obtain sufficient reliable data concerning transfers of business ownership interests in the private marketplace. Analysts generally consider three types of market transactions:

1. Transactions involving minority interests in publicly traded companies (guideline public companies)
2. Merger and acquisition transactions involving publicly traded or privately held companies (guideline company transactions)
3. Transactions in the subject company's stock

Guideline Public Company Method

Guideline public companies can provide a reasonable basis for comparison to the relevant investment characteristics of the company being valued. Ideal guideline public companies are in the same industry as the company being valued; if there is insufficient transaction evidence available in the same industry, it may be necessary to consider companies in related industries with an underlying similarity of relevant investment characteristics, such as markets, products, growth, and cyclical variability. Guideline public companies should be evaluated by size, capital structure, and trend of sales and earnings. To fully reflect public market analysis and valuation, its stock should be actively traded, whether on an exchange or over the counter. The analyst must often exercise a great deal of judgment in determining which companies are similar enough to be used as guideline companies.

ValTip

Many analysts assume that the guideline public company method is never applicable to small businesses. For the mom-and-pop very small business, this is often a safe assumption. For other small businesses, this assumption is not always safe. There are a large number of publicly traded companies with market capitalization less than $50 million, putting them within reasonable range for some small businesses.

Before Internet resources became readily available, doing a preliminary search for guideline public companies could be very burdensome. With Internet resources like *Marketguide.com*, which includes search tools, it is possible to do an efficient preliminary search for guideline public companies and avoid the danger of overlooking reasonably good ones. In many cases, no guideline public companies will be found for a small business because of differences in size, diversity, and management depth between the small business being valued and the publicly traded companies. Nevertheless, sometimes reasonably comparable public companies can be found for small businesses. Even if the analyst decides that the potential guideline public companies are not sufficiently comparable to use as a basis for calculating value, their disclosure documents—such as Form 10-K, 10-Q, and 8-K—may contain valuable information concerning opportunities and threats in the subject company's industry or transaction information from acquisitions.

Guideline Company Transactions Method

Merger and acquisition activity within the industry may give insight into the value of the stock of a closely held company. Such transactions are an indication of the investing attitude of the public toward the industry. However, reliable data regarding M&A transactions, particularly involving closely held companies, are difficult to find for many industries. Often the information concerning such transactions is too incomplete to be used in calculations of value for a subject company; however, it may be useful as a reasonableness test of the value conclusion. When information

concerning transactions is available, it can provide objective evidence of the value placed on guideline companies by the market.

There are currently four small business transaction databases:

1. The *Bizcomps* database is published by Jack Sanders, Asset Business Appraisal, PO Box 711777, San Diego, CA 92171 (Phone 619-457-0366; *www.bizcomps.com*), and is available in a series of four annual editions.
2. *Done Deals Data* is published quarterly by World M&A Network, 717 D Street, NW, Suite 300, Washington, DC 20004 (Phone: 800-809-0666; Fax: 202-628-6618), and is available on disk.
3. The *IBA Market Database* is published by The Institute of Business Appraisers (IBA), PO Box 1447, Boynton Beach, FL 33425 (Phone: 561-732-3202; Fax: 561-732-4303), and is made available to IBA members.
4. *Pratt's Stats* is published by Business Valuation Resources, 4475 S.W. Scholls Ferry Road, Suite 101, Portland, OR 97225 (Phone: 888-BUS-VALU; Fax: 503-291-7955), and is available online and in print and disk form.

The information available in these databases has expanded tremendously in recent years. *Bizcomps* and the *IBA Market Database* have the largest number of transactions. *Pratt's Stats* usually has the most detailed information on each transaction. The information in *Done Deals* is derived from public documents rather than business brokers. Where available, *Done Deals* and *Pratt's Stats* disclose the name of the companies involved in the transactions. All four databases disclose different information on terms of the deal. These terms may have a large impact on the multiples paid. Data limitations need to be considered when making comparisons between the transactions and the subject company.

ValTip

The analyst must exercise caution in using these databases because they define variables in different ways.

Done Deals and *Pratt's Stats* include inventory in the deal price, but *Bizcomps* excludes inventory. *Bizcomps* uses the term "seller's discretionary cash flow" and *Pratt's Stats* uses the term "discretionary earnings" to describe earnings before taxes, interest, compensation to one owner, and noncash charges. The *IBA Market Database* uses the term "annual earnings" but includes noncash charges.

ValTip

Revenue and discretionary earnings are two of the most common multiples used in the guideline company transaction method.

Revenue multiples are used most often for service businesses or when reliable data on earnings is not available. Using this multiple implies that the subject company and the acquired companies have similar asset ratios and similar profit margins.

Discretionary earnings reflect the cash available to service acquisition debt and to pay the owner a salary. When this multiple is used, the method reflects a cash payback concept. The transaction databases provide information concerning multiples to be used to arrive at an indication of value. Business brokers commonly use this method to determine prices for small businesses.

When a guideline company transaction multiple is used to determine value, the result will not include adjustments for an excess or a shortage of working capital, real estate, long-term debt, non-compete agreements, etc. For example, multiples derived from the *Bizcomps* database do not include inventory. These items must be added to or subtracted from the initial result to determine the value of the enterprise.

ValTip

Value indications derived from the guideline company transaction method are on a control basis.

Past Transactions in the Company's Stock

One of the best market approach methods to value involves analysis of recent transactions in the subject company's own stock. There is generally no active market for closely held common stock, but if some transactions have occurred, a market value sometimes can be derived and used as an element in the determination of fair market value. It is important that these transactions be arm's length. Even if only limited transactions have occurred at arm's length, the analyst sometimes can draw inferences about fair market value based on these transactions.

Rules of Thumb

There are many rules of thumb for valuing small businesses in various industries. They are often widely discussed in a particular industry, and business brokers may refer to them. As an analyst, it is important to be aware of these rules of thumb and to be able to discuss why the value conclusion for the subject company falls at the top or bottom or even outside of the range indicated by rules of thumb. They do not address important factors influencing the value of a particular company or terms of deals. Rules of thumb purport to reflect average multiples paid in transactions but are not traceable to specific transactions. Thus, transaction databases provide better, more objective information on multiples.

ValTip

Although rules of thumb may provide insight on the value of a business, it is usually better to use them for reasonableness tests of the value conclusion.

Three sources of rules of thumb are:

1. *The 2002 Business Reference Guide,* edited by Thomas L. West (Concord, MA: Business Brokerage Press, 2002).
2. *Handbook of Business Valuation*, 2nd Ed., edited by Thomas L. West and Jeffrey D. Jones (New York: John Wiley & Sons, 1999).
3. *Handbook of Small Business Valuation Formulas and Rules of Thumb*, 3rd Ed., by Glenn Desmond (Camden, ME: Valuation Press, 1993).

Excess Cash Flow (Earnings) Method

The excess cash flow/earnings method is a hybrid method, combining aspects of both the asset and income approach.

This method is widely used for small businesses but analysts frequently misuse it.

Four general steps are involved:

1. Determine the market value of the net tangible assets of the business.
2. Determine the normalized or representative cash flow/earnings of the business.
3. Determine appropriate rates of return on both the net tangible and intangible business assets. Multiply the value of net tangible assets by the required rate of return for net tangible assets to determine the return on net tangible assets, then subtract that return from normalized earnings to derive "excess earnings." Divide these excess earnings by the required rate of return (cap rate) on intangible assets to determine the value of intangible assets.
4. Add the value of the net tangible assets to the value of intangible assets to arrive at a value for the business.

Although this method appears easy, a number of subjective judgments are involved, the most difficult being determination of an appropriate rate of return/cap rate for excess earnings/cash flow. This determination is a largely subjective process and requires substantial analyst judgment. See Chapter 4 for a more detailed example on the application of this valuation method.

REASONABLENESS TESTS

After arriving at a preliminary conclusion of value for a small business, it is important to step back from the process and consider the reasonableness of the conclusion. One of the tests of the reasonableness of the value conclusion is to consider the feasibility of financing a transaction at the concluded value. Although there are variations, for a small business, typical financing assumptions might include:

- Down payment of 25 to 30 percent
- Repayment period of three to five years
- Market rate of interest rate considering the risk of a small business
- Seller financing

For larger small businesses with strong earnings and substantial assets, terms might be better:

- Down payment of 20 percent
- Repayment period as long as seven to ten years
- Possible bank financing

The business should be able to generate adequate cash flow to provide reasonable compensation to the owner and make its debt payments.

Other reasonableness tests include:

- Considering the range of value implied by rules of thumb and the strength of the subject company relative to others in the industry
- Developing a capitalization rate using the build-up method and comparing it to the overall rate implied by the excess cash flow/earnings method, if used
- Considering the reasonableness of the magnitude of goodwill implied by any cash flow/earnings and market methods used

SUMMARY

Small businesses are usually owned by individuals, family members, or employees. They are likely to be highly dependent on the owner/manager. They also tend to have lower-quality financial statements and less access to capital than larger businesses. Buyers of small businesses expect to be involved in day-to-day management of the business and are very concerned with lifestyle issues. These characteristics of small businesses influence the adjustments appropriate in the valuation process and influence the choice of valuation methods.

CHAPTER 18

Valuation Issues in Professional Practices

Professional practice valuation follows the same principles as the valuation of other businesses. Many of the concerns in valuing professional practices are similar to valuing small businesses, such as the likelihood that a practice is highly dependent on a single individual or a few individuals and that it often uses cash basis accounting. Professional practices are service businesses and usually have few tangible assets. The success of professional practices is dependent on relationships with clients or patients and the reputation of the professionals in the community.

ValTip

Many professional practices obtain most of their patients or clients through referrals based on the reputation of specific professionals.

Professional practices, especially medical practices, may have contractual relationships with third-party payers. Professionals are required to meet specific educational requirements, and most must obtain professional licenses. These characteristics of professional practices influence their valuations.

ValTip

In some jurisdictions, an important issue in valuing professional practices is distinguishing between the goodwill that is solely attributable to the professional (and difficult to transfer) and the goodwill that is attributable to the practice.

Case law, regulatory concerns, and rapidly changing economic circumstances also influence the valuation of professional practices. The complexity of valuing professional practices has led some analysts to specialize in valuing professional practices or in valuing specific kinds of professional practices, especially medical practices, for which the market has been very active.

TYPES OF PRACTICES

There are many different types of professional practices. However, from a valuation perspective, most analysts are involved in the following practices: medical, law, accounting, architecture, and engineering.

Medical Practices

The medical practice environment is rapidly changing, complex, and highly regulated. A description of some major trends in the medical practice environment that influence value follows:

- The supply of doctors has increased substantially. The number of medical doctors inpatient care per 100,000 people increased from 132 in 1965 to 226 in 1996.[1]
- Medical expenses have been growing at such a rapid rate that it has led to the general public perception that medical costs are out of control.
- Managed care organizations designed to control costs have emerged as a major market force. The growth of managed care organizations has led to growth in capitation or reimbursement based on the number of covered patients served rather than on the specific services rendered.
- There has been a shift from individual physician practices to corporate-like medicine in recent years. This shift is a response to growing physician numbers, an ever-increasing administrative and regulatory burden, and the emergence of managed care. This shift from individual physician practices includes:
  - Growth in group medical practices
  - Growth in vertically integrated systems with hospitals acquiring physician practices
  - The appearance (and sometimes demise) of publicly traded, practice management companies
- Vertically integrated systems have sometimes been disappointing in their profitability, and some acquired medical practices have been spun off.
- Publicly traded practice management companies provide medical practices with access to capital markets, strong management, and managed care expertise. However, many of these entities have suffered financial hardships.
- Complex regulation affects the healthcare industry. The federal government provides constant oversight of healthcare transactions. Increased scrutiny of the Internal Revenue Code § 501(c)3 status of tax-exempt organizations has affected the market for selling medical practices to charitable institutions. The primary

[1] Robert J. Cimasi, "The Valuation of Healthcare Entities in a Changing Regulatory and Reimbursement Environment," *Proceedings of the ASA Advanced Business Valuation Conference*, (October 1999), p. 25. American Society of Appraisers, Herndon, VA.

concern about these transactions is that they should not result in any private benefit or private inurement to certain insiders of a tax-exempt organization. Almost every year there are new guidelines to prevent healthcare fraud. Analysts valuing medical practices must keep up with changes in the regulatory environment. Buyers unaware of the illegality of activities of a medical practice may be liable for penalties for violations.[2] In his *Medical Practice Valuation Guidebook 2001/2002*, Mark Dietrich said: "I cannot overemphasize the importance (or associated difficulty) of a good working knowledge of the Stark, Fraud and Abuse, and similar state regulations of healthcare transactions when doing valuations."[3]

For further information on medical practices, see Chapter 19.

Law Practices

In the past, state laws and legal ethics forbidding the sale of client files and goodwill have hampered transactions in legal practices. In recent years, state laws concerning the sale of law practices have relaxed, but there is still little market information concerning the value of legal practices.

Accounting Practices

Accounting practices tend to have few tangible assets, and their value arises primarily from professional relationships with clients. The terms of the sale of accounting practices generally include a noncompete agreement and an earnout or a guarantee of revenue or client retention. These terms reflect the importance of client retention to the value of the practice. In addition, due to the risk of client loss and the lack of tangible assets, the sale of an accounting practice is frequently seller financed. Banks tend to prefer loans to be backed by tangible assets. Seller financing tends to increase the seller's motivation to help with client retention. Finally, because accounting practices have simple cost structures and few tangible assets, often they are sold at a multiple of revenue.

Architecture and Engineering Firms

Architectural and engineering firms seem to be more like small businesses than other professional practices. The adjustments to their financial statements are more similar to the adjustments made for small businesses than those made for other professional practices. Likewise, the common purposes for their valuation and the valuation methods are more similar to small businesses than to other professional practices.

The *ZweigWhite 2001 Valuation Survey of Architecture, Engineering, Planning & Environmental Consulting Firms* (ZweigWhite) indicates that small architecture and engineering firms with one to 24 employees and younger firms founded since 1980 tend to have the highest valuation ratios. These small, young firms tend to

[2] Mark O. Dietrich, *Medical Practice Valuation Guidebook 2001/2002*, (San Diego, CA: Windsor Professional Information, 2001), pp. 327–363.
[3] *Ibid.*, p. 328.

have higher values because of their focus on growth and profitability. Overall, valuation ratios are reported to have declined in recent years. ZweigWhite reports that buyers are reluctant to pay high premiums except when buying smaller firms in fast growing niche markets.[4]

PURPOSE OF VALUATION

ValTip

Although professional practices are valued for the same reasons as other types of businesses, litigation (including disputes among principals and marital dissolutions) and transactions (including the sale of a practice, an associate buying in, and buy-sell formulas) account for a large portion of the valuation work.

Estate and gift tax planning and planning for ownership succession also account for a significant amount of valuation work for professional practices. Relatively little professional practice valuation work is for employee stock option plan (ESOP) purposes. Generally only architectural and engineering firms, which have fewer operational differences from other small businesses, have ESOPs.

PROFESSIONAL GOODWILL AND PRACTICE GOODWILL

Goodwill is defined in the valuation industry as: "that intangible asset arising as a result of name, reputation, customer loyalty, location, products, and similar factors not separately identified."[5]

Other insights into goodwill can be obtained by reviewing the California Code of Civil Procedure:

> . . . the benefits that accrue to a business as a result of its location, reputation for dependability, skill or quality and any other circumstances resulting in probable retention of old or acquisition of new patronage.[6]

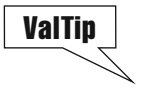
In the *Pacific Law Journal*, James Harper makes the transition from the goodwill of a business to the goodwill of a professional practice:

> . . . goodwill can be described as a form of differential advantage. This differential advantage gives rise to earnings in excess of a normal return on assets, including labor and services provided. The existence of goodwill, whether personal or commercial, results in excess earnings. The

[4] Clark H. Stuart, *ZweigWhite 2001 Valuation Survey of Architecture, Engineering, Planning & Environmental Consulting Firms* (Natick, MA: 2001), pp. 12–40.
[5] *International Glossary of Business Valuation Terms.*
[6] California Code of Civil Procedure, Article 6, paragraph 1263.510.

> determination whether personal goodwill can be regarded as an asset . . . is made easier by recognizing that goodwill results in excess earnings.[7]

A large portion of the value of a professional practice may be attributable to intangible assets. Many professional practices, such as accounting and law practices, have relatively few tangible assets. Other professional practices, such as dental and optical practices, have considerable tangible assets—dental practices with a substantial investment in equipment and some inventory and optical practices with a substantial investment in inventory.

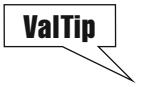


Goodwill may be the primary intangible asset found in professional practices, but the definition of goodwill differs in different scenarios.

In the legal community (and case law), goodwill often represents all asset value above tangible assets. In the world of accounting and appraisal, goodwill represents asset value that has not been identified as related to a specific tangible or intangible asset.

In many states' professional practice case law, goodwill is composed of a "practice goodwill" component that is attributable to the practice entity and a "professional goodwill" component that is attributable to professional practitioners personally.

The intangible value or goodwill of a professional practice can be difficult to measure and can be difficult to preserve in a transaction. Much of the value of a professional practice lies in professional goodwill. Although a sizable part of professional goodwill may not be able to be transferred to another professional, there is often some transferability to a qualified buyer with careful planning and cooperation between the seller and the buyer. The selling practitioner can transfer some client trust by introducing clients to the buying practitioner and by bringing the buyer into the practice as an associate, providing a transition period. A noncompete agreement between the buyer and seller can help ensure the successful transfer of



When a professional practice is being valued for transaction or litigation purposes, it may be important to identify professional and practice goodwill separately and to discuss the likelihood that a portion of the professional goodwill can be transferred in a transaction.

[7] James R. Harper, "Excess Earnings: Redefining the Professional Goodwill Doctrine," *Pacific Law Journal*, Vol. 165 (1985).

clients; and the buyer usually is willing to pay an additional amount for this further assurance of the transfer of clients.

For marital dissolution purposes, the analyst generally needs to know applicable state law and precedent concerning professional goodwill. Courts in several states have ruled that professional goodwill is a marital asset to be valued and divided between the divorcing spouses along with other property. In these states, the practice is valued on a going concern basis assuming that the practitioner will continue in an active capacity for a reasonable period of time, depending on the age, health, and work habits of the professional. Little or no weight may be given to the difficulty of transferring a professional practice that is dependent on referral sources. Thus, because no transaction actually is contemplated, the concept of fairness to the nonprofessional spouse may be given more weight than the concept of fair market value in a hypothetical transaction.

SELECT CASE LAW FOR MARITAL DISSOLUTION

Case law related to goodwill as property subject to distribution generally falls into two camps: asset or income stream. The California courts generally hold that all goodwill, professional and practice, should be considered as an asset, a part of community property subject to division. As one court states:

> [I]n a matrimonial matter, the practice of the sole practitioner husband will continue, with the same intangible value as it had during the marriage. Under the principles of community property law, the wife, by virtue of her position of wife, made to that value the same contribution as does a wife to any of the husband's earnings and accumulations during marriage. She is as much entitled to be recompensed for that contribution as if it were represented by the increased value of stock in a family business.[8]

Conversely, an Illinois court distinguishes the issue as:

> Although many businesses possess this intangible known as goodwill, the concept is unique in a professional business. The concept of professional goodwill is the sole asset of the professional. If goodwill is that aspect of a business which maintains the clientele, then the goodwill in a professional business is the skill, the expertise, and the reputation of the professional. It is these qualities which would keep patients returning to a doctor and which would make those patients refer others to him. The bottom line is that this is reflected in the doctor's income-generating ability . . . .
>
> Although goodwill was not considered in the court's valuation of the business itself, it was a factor in examining [the husband's] income

[8] *Golden v. Golden*, 75 Cal. Rptr. 735 (Ct. App. 1969) at 738. As quoted in *Valuing Professional Practices and Licenses,* Ronald Brown (New York: Aspen Law & Business, 2002), Section 1.03[b].

> potential. To figure goodwill in both facets of the practice would be to double count and reach an erroneous valuation.[9]

In *Thompson v. Thompson*, the Florida Supreme Court states:

> If a law practice has monetary value over and above its tangible assets and cases in progress which is separate and distinct from the presence and reputation of the individual attorney, then a court should consider the goodwill accumulated during the marriage as a marital asset. The determination of the existence and value of goodwill is a question of fact and should be made on a case-to-case basis with the assistance of expert testimony . . . .
>
> The clearest method would be the fair market value approach, which is best described as what would a willing buyer pay, and what would a willing seller accept, neither acting under duress for a sale of the business. The excess over assets would represent goodwill. We prefer this method and direct that it be the exclusive method of measuring the goodwill of a Professional Association. Actual comparable sales are not required, so long as a reliable and reasonable basis exists for an expert to form an opinion.[10]

In *Hanson v. Hanson*, the Missouri court states that the fair market value approach does not take into consideration the future earning capacity of the professional goodwill or the post-dissolution efforts of the professional spouse.

> Fair market value evidence appears to us to be the most equitable and accurate measure of both the existence and true value of the goodwill of an enterprise. Evidence of a recent actual sale of a similarly situated practice, an offer to purchase the subject or a similar practice, or expert testimony and testimony of members of the subject profession as to the present value of goodwill of a similar practice in the open, relevant, geographical and professional market is the best evidence of value.
>
> The fair market value method is most likely to avoid the "disturbing inequity in compelling a professional practitioner to pay a spouse a share of intangible assets at a judicially determined value that could not be realized by a sale or another method of liquidating value.[11]

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[9] *In re Marriage of Zells,* 572 N.E.2d at 946 (quoting *In re Marriage of Courtwright*, 507 N.E.2d 891 (Ill. App. 1987)). Following *Zells*, the court in *In Re Marriage of Phillips,* 615 N.E.2d 1165 (Ill. App. 1993) affirmed the trial court's reliance on a finding of goodwill in the husband's physical therapy practice to justify an award of maintenance. The court interpreted *Zells* as holding that although professional goodwill is not subject to distribution as a marital asset, it can be valued and relied on in setting support awards. As quoted in *Valuing Professional Practices and Licenses,* Ronald Brown (New York: Aspen Law & Business, 2002), Section 1.03[a].

[10] *Thompson v. Thompson,* 16 FLW S73.

[11] *Hanson v. Hanson*, 738 S.W. 2nd 429, 434 (Mo. 1987).

In *Thompson*, the Florida court agrees with *Hanson*, saying that:

- Goodwill does not exist for purposes of a marital dissolution if it cannot be sold.
- Professional goodwill must be distinguished from the personal goodwill of the practitioner.
- The market approach, and possibly the use of the buy-sell agreement, is the only acceptable evidence of the existence of goodwill.[12]

In *Dugan v. Dugan*, the *Atlantic Reporter* has summarized the New Jersey court's attitude toward goodwill:

> In evaluating attorney's goodwill in his exclusively owned professional corporation, court should first ascertain what an attorney of comparable experience, expertise, education and age would be earning as an employee in the same general locale; attorney's net income before federal and state income taxes for a period of years, preferably five, should be determined and averaged, and the actual average should then be compared with the employee norm; and if attorney's actual average realistically exceeds the total of employee norm and a return on investment and physical assets, the excess would be the basis for evaluating goodwill, with this excess subject to a capitalization factor.[13]

Specifically, the court states:

> One appropriate method to determine the value of goodwill of a law practice can be accomplished by fixing the amount by which the attorney's earnings exceed that which would have been earned as an employee by a person with similar qualifications of education, experience and capability. This is a fair manner in which to resolve the goodwill constituent.[14]

Further, in Nebraska the *Taylor v. Taylor* opinion concluded:

> Consequently, where goodwill is a marketable business asset distinct from the personal reputation of a particular individual, as is usually the case with many commercial enterprises, that goodwill has an immediately discernible value as an asset of the business and may be identified as an amount reflected in a sale or transfer of such business. On the other hand, if goodwill depends on the continued presence of a particular individual, such goodwill, by definition, is not a marketable asset distinct from any individual. Any value which attaches to the entity solely as a result of personal goodwill represents nothing more than probable future earning capacity, which, although relevant in determining alimony, is not a proper consideration in dividing marital property in a dissolution proceeding.[15]

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[12] Douglas K. Fejer, *Business Valuation Review* (December 1988), p. 154.
[13] *Dugan v. Dugan*, 457A.2d 1 (N.J. 1983).
[14] *Ibid.*, p. 9.
[15] *Taylor v. Taylor*, 386 N.W. 2d 851 (Nebraska 1986). As quoted in *Valuing Professional Practices and Licenses,* Ronald Brown (New York: Aspen Law & Business, 2002), Section 1.03[c].

Broadly speaking, the following are some of the states that recognize goodwill as a marital asset subject to distribution: Arizona, California (including celebrity goodwill), Kentucky, Montana, Michigan, New Jersey (including celebrity goodwill), New York (including holding that a professional license or degree is marital property), North Carolina, and Ohio.

Many other states, however, allocate the income used to generate the professional goodwill as a basis for alimony instead. These states include: Alaska, Arkansas, Connecticut, Florida, Hawaii, Kansas (by statute), Maryland, and Nebraska. Some of these states will allow practice goodwill to be considered as a marital asset if the market comparables provide clear and convincing evidence and are closely aligned with the self-evident facts of a divorce. As stated in *Weinstock*, a Florida case:

> The comparables used cannot serve as competent evidence of value in view of the language in *Thompson* that "such goodwill, to be a marital asset, must exist separate and apart from the reputation or continued presence of the marital litigant." . . . The purest form of comparable in the sale of any business would be a sale in which, on the day of closing, the seller simply picks up the sales proceeds and retires or moves out of the area, thus eliminating any further personal influence the seller could have on the business.[16]

Analysts must have a clear understanding of state law as it pertains to marital dissolution.

While lawyers will haggle over the nuances of professional goodwill versus practice goodwill, there is a third element to consider—the income stream capitalized to create these assets. Also as courts become more sophisticated and accounting rules and regulations are adopted (particularly those related to measuring intangible assets and goodwill), measurements of the particular assets will become more precise. Exhibit 18.1 at the end of this chapter illustrates these relationships.

FACTORS AFFECTING VALUE

A number of factors influence the value of a professional practice and the allocation of goodwill between professional and practice goodwill:

- Level and stability of practice earnings and/or cash flow
- Qualifications and work habits of the professionals

[16] *Weinstock v. Weinstock*, So. 2d (Fla. Dist. App. 1994).

- Age and health of the professional
- Specialty and fee schedule including fees earned compared to others in the specialty
- Trained and assembled workforce
- Reliance on referrals
- Type of clients or patients served and contractual relationships with third-party payers
- Geographic location
- Supply of professionals and competition

Earnings and/or Cash Flow

The expected future earnings and/or cash flow of a professional practice are a primary determinant of value. Professional practices usually pay out all their earnings to their principals as compensation and benefits. Thus, the analyst generally should focus on the economic income of the professional practice—earnings before compensation and benefits are paid to the practice principals—as a measure of earnings. If earnings are highly volatile, as they are for a law firm with large contingent-fee cases, value tends to be lower based on earnings riskiness. However, consistently high earnings do not necessarily indicate a high practice value. A professional with an outstanding reputation may attract many referrals, but the resulting high earnings in the practice reflect professional goodwill, not practice goodwill. A professional may work much longer than normal hours but the resulting high earnings may not increase the value of the practice.

Qualifications and Work Habits of the Professionals

The analyst must consider the professional qualifications and work habits of practice professionals. To assess the extent to which a practice professional is receiving higher than average compensation and benefits, the analyst may obtain information concerning the education, licenses, additional qualifications, personal skills, special training, age, and years of experience of that professional and the other professionals in the practice. This information can be used to compare the professional's compensation and/or the practice's economic income with averages for professionals of the same age and with the same specialty in the same market.

It is important to be sure the professional's earnings and/or the practice's economic income have been calculated in the same manner as the comparative compensation data.

The analyst also must inquire about the work habits of the professionals—asking about the number of hours worked each week and the amount of time spent away from work each year for vacation and continuing education. If professionals are spending more than normal time on professional duties, it may decrease value

relative to practice earnings because a buyer, who is a professional, might not be willing to work more than normal hours. If the extra time spent at work is spent handling administrative matters that could be handled by nonprofessional staff members, the negative impact may be less.

Age and Health of the Professional

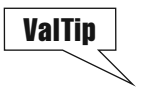
The age of the practitioner is an important factor in determining average compensation for similar professionals in the market area. Age along with the health and work habits of the practitioner provide indications of the expected future work life of the practitioner. Health also provides an indication of the practitioner's ability to sustain the current workload.

Specialty and Fees Schedule

The type of services provided and the efficiency of the practitioner influence practice earnings and practitioner compensation. Fee schedules in comparison with community standards provide an indication of the professional's reputation and skills. If the fee schedule is above average and the practice retains a large number of clients, it is an indication of above-average professional skills.

Trained and Assembled Workforce

A trained and assembled workforce in place contributes to the value of a professional practice. A trained administrative staff following established management systems is an asset to a professional practice. If clients or patients have ongoing relationships with paraprofessionals, such as dental assistants, who handle many client services, these employees can enhance practice value. If nonowner professionals have strong relationships with clients or patients, it is important to determine if such key professionals have employment agreements with the practice. If employment agreements are in place, it may support or enhance value; if not, it may detract from value.



In a small professional practice, value may be greater if a successor for the key professional is in place. Bringing in an associate and introducing the associate to clients or patients may facilitate the transfer of some "professional goodwill" and may increase the price received by the exiting professional.

Reliance on Referrals and Client Persistence

In certain types of professional practices, the professionals and staff develop strong relationships with clients or patients. Clients or patients become accustomed to coming to a specific location for professional services. If such client relationships are persistent, it tends to increase the value of the professional practice.

In other types of professional practices, clients or patients are referred to professionals because of their reputation and skills. Reliance on referrals tends to decrease the value of a practice because such a practice relies on the personal reputation of the professional, which is difficult to transfer to another party.

Thus, general dentistry practices, pediatric practices, and some larger accounting practices may have value in the form of "practice goodwill"—patient or client relationships that may be able to be transferred with careful planning. On the other hand, orthodontist practices, orthopedic surgeon practices, and business valuation practices may have less "practice goodwill" because of their dependence on referrals.

Types of Clients or Patients

The client base of the practice should be thoroughly analyzed. The volume and quality of client records, the demographics of the client group, and payer source affect the value of the practice. For example, medical practices may receive reimbursement directly from the patient ("private pay") or from various third-party payers, including traditional insurance plans, health maintenance organizations, Medicare, and Medicaid. Practices with more private pay patients and traditional insurance plan patients tend to be worth more than practices with substantial dependence on Medicare and Medicaid patients. In many markets, contractual relationships with various third-party payers control access to patients and influence the value of medical practices. If a high proportion of clients are from health maintenance contracts that cannot be transferred, the value of the practice is less. The analyst needs to understand the local market and inquire about the composition of the patient/client pool of a practice.

In an accounting or law practice, there should be an analysis of which clients are recurring, nonrecurring, or recurring nonrecurring. Recurring clients need services each year as in an annual audit or tax return service. Nonrecurring clients show up only once, as in a personal injury case for a plaintiff represented by a law firm. Recurring nonrecurring clients appear once in a while but not in a predictable manner, as in damage cases for a larger corporation or an accounting firm.

Location

Professional practices located in attractive neighborhoods in cities with strong economies, good schools, recreational opportunities, and cultural amenities have greater appeal to professionals and their families than less attractive locations. Thus, an attractive location may increase practice value.

Supply of Professionals and Competition

Existing professional practices become more attractive and more valuable when the supply of professionals in that particular field is high. If there is a shortage of professionals in a field, it can be relatively easy to hang up one's "shingle" and go into business for oneself. If there is a strong supply of professionals in a particular field, the barriers to entry for a new practice increase and buying an established practice becomes more attractive.

Summary

Value factors such as the qualifications, skills, age, and work habits of the professional relate primarily to professional goodwill. Other factors such as an assembled workforce, geographic location, type of clients or patients and contractual relationships with third-party payers, and supply of professionals relate primarily to practice goodwill. Reliance on referrals tends to increase the importance of the professional's qualifications and to increase the portion of goodwill attributable to professional rather than practice goodwill.

The analyst will obtain the answers to these and other pertinent questions during a management interview. Several general and supplemental questionnaires have been developed to assist with organizing the information. See Appendixes 1-3 at the end of this chapter.

FINANCIAL STATEMENT ADJUSTMENTS

ValTip

When valuing professional practices, it is important to analyze and make appropriate adjustments to the financial statements. The widespread use of cash basis accounting may require a number of adjustments.

In a cash basis entity, there is frequently substantial value in unrecorded assets, such as accounts receivable, inventory, prepaid expenses, and leasehold improvements. In addition, the practice may have fully depreciated assets that are still in use. There may also be unrecorded liabilities, such as accounts payable, accrued wages and vacation time, and accrued taxes. Determining appropriate cash to accrual adjustments is relatively simple if the valuation date is current but tends to be more difficult when the valuation date is in the past. When the valuation date is in the past, estimates must be based on inquiries and an analysis of the historical timing of cash inflows and outflows.

Some professional practices may have nonoperating assets, such as excess cash and art collections. Such nonoperating assets and any related income or expenses must be considered when making adjustments. Finally, the analyst must inquire about and consider any possible contingent liabilities, particularly lawsuits. See Chapters 3 and 4 for further information on financial statement adjustments.

Accounts Receivable

Often accounts receivable are not recorded on the balance sheets of professional practices. Courts typically recognize accounts receivable as a tangible asset subject to community property or equitable distribution. Most states have rejected the argument that accounts receivable should not be considered an asset because it is the source for cash flow resulting in the income available for alimony. The analyst can easily determine the accounts receivable balance as of the valuation date by obtaining computer printouts of accounts receivable or examining the manual accounts

receivable journal, provided the valuation date is reasonably current. When the valuation date is in the past, it may be more difficult to determine the accounts receivable balance. Sometimes the accounting system of the professional practice does not provide historical receivables information. Then it is necessary to estimate receivables based on cash collections after the valuation date and to make inquiries about the collection cycle of the practice.

It is also important to obtain an accounts receivable aging schedule and make inquiries about the collectibility of older receivables to determine their market value. This analysis will include accounts that have been turned over to collection agencies. Although the value of such accounts is usually small after the agency's collection fee, it will need to be considered along with other receivables. After considering the collection history of the practice and any trends upward or downward, older accounts usually should be discounted for the time value of money and the risk that they may never be collected.

Inventory

Another asset often not recorded on the balance sheet is inventory, both supplies and unbilled accounts receivable (work-in-process inventory). Supplies may be immaterial in an accounting or legal practice but may be material in some professional practices, such as dental or optometric practices. If the valuation date is in the past, supplies can be estimated from subsequent cash expenditures and discussions with management.

Professional practices that bill on an hourly basis or on a percentage-of-completion basis have unrecorded assets for work they have done but have not billed. For past valuation dates, the analyst must estimate unbilled receivables at the valuation date based on subsequent billings and inquire about how often billing is done and the historical level of write-offs of chargeable hours.

Equipment

Many professional practices have little equipment other than office furniture, computers, and computer peripherals. These may quickly become economically obsolescent and may not require adjustment. Other professional practices, such as dental practices, may have a substantial investment in specialized equipment. In such cases, the analyst should judge if it is necessary to have the equipment appraised by a machinery and equipment appraiser and to adjust the value recorded on the balance sheet.

Other Unrecorded Assets

Other unrecorded assets might include prepaid expenses, leasehold improvements, and fully depreciated assets still in use. Rent and insurance are often prepaid and may represent significant assets as of the valuation date, especially if there have been recent payments for extended future periods. For example, annual malpractice insurance premiums, if paid two months before the valuation date, would result in a prepaid asset for 10 months of insurance premiums.

If the analyst notes during the management interview that the office is in good condition but leasehold improvements have been fully depreciated on the practice's

depreciation schedule, it may be appropriate to adjust the value of the leasehold improvements. Any such adjustment should reflect the expected remaining life of the improvements and the remaining term of the lease.

A number of other practice assets, such as library resources, normally are expensed as acquired and commonly are not recorded on the books. Adjustments can be made to reflect the value of such assets on the balance sheet.

Appraisals by a qualified personal property appraiser should be considered if such nonoperating assets are to be retained by the practice.

ValTip

If the practice owns material amounts of nonoperating assets, such as art collections and antiques in excess of what is customary in the decor of comparable offices, it may be necessary to value these assets separately from practice operations.

Accounts Payable and Accruals

Cash basis balance sheets usually do not include accounts payable. If the valuation date is current, the analyst can simply list unpaid invoices to determine the accounts payable. If the valuation date is historical, the analyst can estimate accounts payable based on a review of canceled checks and the associated invoices. If the practice's expenses are incurred evenly throughout the year and paid on a regular basis (e.g., weekly or monthly), it may be possible to estimate accounts payable as of the valuation date by dividing annual expenses (adjusted for expenses not included in accounts payable, i.e., payroll expenses) by the payment cycle (e.g., 52 weeks, 12 months).

Cash basis balance sheets do not included accrued liabilities. Most of the accrued liabilities of a service business are related to employees, such as wages, payroll taxes, and accrued vacation and sick leave. These accrued liabilities can be estimated based on total payroll, the payroll cycle, and inquiries about accrued vacation and sick leave.

Deferred Liabilities

The deferred liabilities of a professional practice include unearned income and deferred expenses. Law practices and consulting firms frequently collect retainers before providing any client service. Certain medical bills also are collected in advance of rendering the service. Until the practitioner actually performs the professional service, the firm has a liability payable to the client.

Deferred taxes reflect timing differences in the recognition of certain revenue and expenses between tax returns and financial statements. For example, equipment may be depreciated over shorter lives, and the depreciation expense may be higher for tax purposes in early years than for financial statement purposes. Thus financial statement income may be higher than tax return income. Deferred taxes on the financial statements reflect a tax liability to cover the anticipated higher financial

statement income. In addition, as valuation adjustments are made to the financial statements, the deferred taxes related to these adjustments may be recorded, if material. Some analysts use tax depreciation in place of book depreciation for assets instead of a deferred tax adjustment.

Long-Term Debt

Long-term debt in a professional practice usually arises from equipment purchases or from past transactions in practice ownership interests. In either case, the existence of long-term debt highlights the possibility that accrued interest expense may need to be recorded. If the long-term debt arose from a past transaction, the analyst should inquire about the terms of the transaction, when it occurred, and whether the price was negotiated on an arm's-length basis (in case the transaction might qualify as an indication of practice value).

The practice also may have lease obligations that should be recorded on the balance sheet or should be adjusted to market value. The analyst should inquire as to whether the lease involves related parties and whether the lease rate is a market rate. If the lease is not at a market rate, an adjustment may be indicated.

Contingent Liabilities

The analyst needs to inquire about contingent liabilities that may be reasonably estimated. Possible contingent liabilities of a professional practice include malpractice lawsuits, disputes about past billings, and owner retirement obligations. These and other questions should be addressed during the management interview.

VALUATION METHODS

The three basic valuation approaches—asset, income, and market—include methods that may be applicable to the valuation of a professional practice.

Asset Approach

The asset approach attempts to value each asset and each liability of a business or professional practice at fair market value and to calculate the net asset value of the business or practice. It is relatively easy to determine the net tangible asset value of a professional practice after making the financial statement adjustments discussed previously. The difficulty of this method arises in the valuation of the individual intangible assets, which in professional practices can account for most of the value of the practice. The valuation of individual intangibles, including client records and goodwill, usually requires use of an income or a market method (See Chapter 20). The asset method, which includes the value of individual intangible assets, is usually not applied in the valuation of professional practices because this total asset method is time consuming, expensive, and often unnecessary. The income (including, if applicable, the excess cash flow method) and market approaches capture the aggregate value of all assets including intangible assets.

Income Approach

The income approach method determines a value indication for a professional practice by converting anticipated future economic benefits, such as earnings or cash flow, to a present value using a discount rate or capitalization rate. This approach to valuing a professional practice requires the analyst to determine normalized future earnings. Recent historical earnings of the practice, adjusted for nonrecurring revenue and expenses and for changes in the industry (especially the rapidly changing medical industry), can provide an indication of the benefits that can be expected in the future. The economic benefit measure that best reflects the future economic benefits stream available to the professional practice varies. Economic benefits measures often considered in valuing a professional practice include:

- Net cash flow—the Internal Revenue Service prefers the discounted net cash flow method when appraising the fair market value of medical practice entities under Internal Revenue Code Section 501(c)3[17]
- Pretax earnings after a market rate salary to the owner or practitioner
- Economic income or total pretax earnings including the owner's or practitioner's salary and benefits
- After-tax earnings

The discount rate to be applied to the economic benefits stream is calculated using the build-up method or, if applicable, the Capital Asset Pricing Model (CAPM). A discount rate is the total expected rate of return, stated as a percentage, that a willing buyer/investor would demand on the purchase price of an ownership interest in an asset (i.e., an ownership interest in a professional practice) given the risk inherent in that ownership interest. This required rate of return varies over time—even for the same investment—due to differences in prevailing interest rates and in returns available on alternate investments. It also varies due to changes in the general economy and in investor perceptions about equity markets. It reflects not only risks in equity markets as a whole but also risks that are specific to the professional practice being appraised. To obtain a capitalization rate, growth is subtracted from the discount rate. See Chapter 5 for more detailed information on discount and capitalization rates.

ValTip

If the economic benefits stream being discounted or capitalized is pretax earnings or pretax earnings plus owners' compensation and benefits, the discount rate or the capitalization rate should be higher than if the benefits stream is net cash flow—after tax.

[17] Robert J. Cimasi, "The Valuation of Healthcare Entities in a Changing Regulatory and Reimbursement Environment," *Proceedings of the ASA Advanced Business Valuation Conference* (October 1999), p. 25. American Society of Appraisers, Herndon, VA.

Discounted future economic benefits methods apply a discount rate to economic benefits projected for a period of years. Discounted future economic benefits methods are most useful when future operations are expected to be substantially different from current operations and growth is not expected to be stable—as when high growth rates are expected in the near term and lower growth rates are expected in the long term.

Capitalized future economic benefits methods apply a capitalization rate to the economic benefits expected in the next year (frequently based on historical performance). The capitalized future economic benefits method is most useful when current operations are indicative of future operations and stable growth is expected in the future. See Chapter 4 for more detailed information on the income approach.

If a practice has nonoperating assets, these nonoperating assets must be valued separately (with appropriate income and expense adjustment) from practice operations and added back to obtain total practice value. These income methods result in value indications for the professional practice as a whole, including goodwill.

Market Approach

The market approach applied to the valuation of professional practices typically includes guideline company transactions and past transactions in the subject practice. Guideline company transactions can provide objective evidence of the value of a professional practice when adequate information concerning the transactions is available. However, information concerning the terms of guideline company transactions and the nature of the practices involved is sometimes too incomplete to provide a basis for calculating a value indication.

ValTip

Guideline company transactions sometimes are used as a reasonableness test for values obtained by other methods.

It may be possible to obtain sufficient data on medical practice transactions because of the large volume of recent transactions in most specialties. Nevertheless, the analyst must exercise caution because of the complexity of the transactions and because of rapid changes in the market for medical practices.

Market information concerning the value of intangibles in medical and dental practices may be found in several publications, including the *Goodwill Registry*, published annually by the Health Care Group in Plymouth Meeting, Pennsylvania. The *Goodwill Registry* reports all practice intangibles under the label of goodwill. Reported values for intangibles are not adjusted to cash equivalent value and other factors. In addition, reported values are not all derived from arm's-length transactions; some are derived from appraisals for divorce and other purposes and arbitrary allocations are made between tangible and intangible assets. For these reasons and because of the incompleteness of the data, information from the *Goodwill Registry*

is useful only for very general reasonableness tests of values for intangibles obtained using other methods.

Although in recent years state laws prohibiting the sale of law practices have started to change, often sufficient market transaction data are not available to provide indications of value. In accounting practices, business brokers or other intermediaries sometimes provide useful information. See Chapter 6 for more information on transaction databases.

Past transactions in ownership interests in the professional practice may provide objective evidence of the value of a professional practice, depending on whether they were negotiated at arm's length and on how much time has elapsed between the transaction date and the valuation date.

ValTip

The usefulness of past transactions in the subject company often is limited by the way the transactions are structured. A substantial portion of the practice value transferred may be included through salary differentials, and it may be difficult to distinguish that portion of the salary differential attributable to the buy-out of a practitioner. Prior transactions also sometimes reflect a punishment to the exiting practitioner for early withdrawal of capital and the practitioner's professional services.

Excess Cash Flow/Earnings

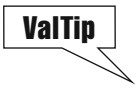
The excess cash flow/earnings method combines an asset approach and an income approach in valuing a business. This method determines the value of the net tangible assets using a net asset method and determines the value of the intangibles by capitalizing "excess earnings." The method provides a basis for estimating the value of intangibles by first determining the "excess" portion of a practice's earnings over and above an adjustment for the market replacement cost of the owning practitioner's compensation and after a reasonable rate of return on the tangible assets of the practice. The method requires subjective judgments concerning appropriate rates of return for the tangible and the intangible assets of the professional practice. While family law courts in certain states expect to see professional practices valued using the excess earnings method, the Internal Revenue Service normally prefers other valuation methods when available. See Chapter 4 for a more detailed discussion of this method.

Rules of Thumb

There are rules of thumb for valuing professional practices. It is important to be aware of these rules of thumb and to be able to discuss why the value conclusion for the subject professional practice falls at the top or bottom or even outside of the range indicated by rules of thumb.

Rules of thumb do not address important factors influencing the value of a specific professional practice. Rules of thumb purport to reflect average revenue multi-

ples paid in transactions but are not traceable to specific transactions. They can be particularly misleading when valuing medical practices, the economics of which and the market for which have been changing so rapidly in recent years.



Although rules of thumb may provide insight on the value of a professional practice, it is usually appropriate to use them only for reasonableness tests of the value conclusion.

Three common sources of rules of thumb are:

1. *The 2002 Business Reference Guide*, by Thomas L. West (Concord: MA: Business Brokerage Press, 2002).
2. *Handbook of Business Valuation*, 2nd ed., edited by Thomas L. West and Jeffrey D. Jones (New York: John Wiley & Sons, Inc., 1999).
3. *Handbook of Small Business Valuation Formulas and Rules of Thumb*, 3rd ed., by Glenn Desmond (Camden, ME: Valuation Press1993).

SUMMARY

Many of the concerns in valuing professional practices are similar to concerns in valuing small businesses, but the analyst must understand the differences specific to professional practices. Distinguishing between the goodwill that is attributable solely to the professional (difficult to transfer) and the goodwill that is attributable to the practice can be critical. In addition, regulatory concerns and rapidly changing economic circumstances influence the valuation of professional practices. The complexity of valuing professional practices has led some analysts to specialize in valuing professional practices or in valuing specific kinds of professional practices.

Exhibit 18.1 Professional Practice Assets, Returns, and Income (Illustration Only—State Specific)

When professional goodwill is included as a marital asset in the division of property, care must be taken not to double count the professional's earnings capacity by also considering it when setting any alimony payments, as may be required by local law.

Column 1 demonstrates that tangible assets provide the floor to any business. On top of this floor come the intangible or soft assets. Although soft, these assets are nonetheless real and very often the primary assets. To the degree that a rate of return on all assets exceeds a reasonable rate of return for each of the tangible and intangible assets, such rate of return must come from residual goodwill. Thus, residual goodwill is the softest of all assets. As Column 2 demonstrates, tangible assets for all comparable practitioners (similar geographic region, similar training, similar experience) result in an expected or normal salary overall. To the degree that an individual practitioner has abnormal salary, it must come from something. The task of the analyst is to identify what that something is.

Since a fundamental financial cornerstone is that the higher the risk the higher the return demanded, the rate of return on these softer, more risky intangible assets, including residual goodwill, must be higher than the more fundamental, less risky assets. Column 3 demonstrates this. For example, if a professional practice has an overall rate of return of a certain percent, then some assets (the tangible less risky ones) will have a lower return forcing the softer, more risky intangible assets to have a higher rate of return. Only in this way can all assets, thus the practice, average the overall rate of return.

It is this higher rate of return which forms the capitalization factor necessary to value the goodwill of a professional practice. Column 4 demonstrates this. To the degree that the abnormal salary is capitalized by the appropriate higher rate of return, this portion of actual salary cannot be considered for other periodic distributions. That is, if a practitioner has a total salary of $150,000 (expected to continue in the foreseeable future) and if $50,000 is determined to result from (and therefore capitalized back into) goodwill, the Court must consider only $100,000 as the basis for periodic alimony. To use the $150,000 as the basis for capitalized goodwill and as the basis for periodic alimony would be double dipping by $50,000, one-third of the salary.

<table>
<tr><th>1

ASSETS</th><th>2
CASH FLOW
To Get to
Take Home Pay</th><th>3

RATES OF RETURN</th><th>4
AVAILABLE FOR
EQUITABLE
DISTRIBUTION</th></tr>
<tr><td>GOODWILL
Professional, Nontransferrable
Practice, Transferrable</td><td rowspan="2">ABNORMAL
SALARY</td><td>Highest
ROR</td><td rowspan="2">LUMP SUM
(Included in
Fair Market Value)</td></tr>
<tr><td>INTANGIBLES
Contracts in Force
Client Lists
Patents/Trademarks/Copyrights
Medical Charts
Patient Histories
Other</td><td>Higher
ROR</td></tr>
<tr><td>TANGIBLES
Other Tangibles
Accounts Receivable
(Billed and Unbilled)
Equipment
Land and Building
Cash and Securities
Deposits and Prepaids</td><td>NORMAL
SALARY</td><td>Lower
ROR</td><td>PERIODIC
(Excluded from
Fair Market Value)</td></tr>
</table>

APPENDIX 1—MANAGEMENT INTERVIEW MEDICAL PRACTICE

Date:_____

Exact Practice Name:_____

Address: _____

_____

Phone: _____

Interviewer:_____

The objective of this management interview is to provide us with operational information that will aid us in the valuation of your business. We will keep the information confidential. Describe the following information to the best of your ability on a separate sheet of paper, with reference to each item number. If some items are not applicable, please indicate N/A.

1. Interviewee(s)

	Name	Title
(a)	_____	_____
(b)	_____	_____
(c)	_____	_____
(d)	_____	_____

2. Description of the Business

(a) Full name of the practice

(b) Date the practice was established

(c) Discuss the history of the practice, from founding to present, including past physicians, important dates, past locations, etc.

3. Name, Address, and Telephone Number of the Practice's Attorney(s)

4. Name, Address, and Telephone Number of the Practice's Accountant(s)

5. Physicians

(a) For all doctors, provide

(1) Name

(2) Age

(3) Education background

(4) Special license requirements

(5) Board certification

(6) Number of years experience

(7) Articles written

(8) Lectures delivered

(9) General health (excellent, good, or poor)

(b) Describe life insurance in which the practice is the beneficiary

(c) Describe the typical work week for each doctor, including

(1) Average number of patients per day

(2) Nature of treatment

(3) Average time per patient/treatment

(4) Hours worked per day

(5) Time spent in

(i) Office visits/treatments

(ii) Surgery—hospital

(iii) Surgery—in office

(iv) Administration

(v) Promotion

(vi) Civic affairs

6. Personnel

(a) Provide a current organizational chart

(b) Provide a list of employees, other than physicians, at year-end for last year including current employee classifications, general wage scales, and approximate rate (distinguish full-time and part-time)

(c) List management personnel with title, length of service, age, and annual compensation (including bonuses) for the current year and past two years.

	Name	Title	LOS	Age	Compensation
(1)					
(2)					
(3)					
(4)					
(5)					

(d) List board of directors by name and title, including occupation for outside members

7. The Practice

(a) Type of marketing
  (1) Professional referral
  (2) Patient referral
  (3) Direct mail
  (4) Yellow pages
  (5) Other

(b) Provide list of competition
  (1) Specialized
  (2) General
  (3) Mini-hospitals

(c) Discuss growth trends, revenue, operating capacity, and equity
  (1) Past
  (2) Projected
  (3) Limiting factors
  (4) New products/services being considered
  (5) Any recent sales of stock (or interests) or offers to buy (or sell)
  (6) Any comparable sales of similar practices

8. Property and Equipment

(a) Describe your office facilities
  (1) Square feet
  (2) Number of examining rooms
  (3) Number of operating rooms
  (4) Number of x-ray rooms
  (5) If owned, provide
    (i) Age and condition
    (ii) Assessed value
    (iii) Fair market value, if known
  (6) If leased, amount of monthly payment

(b) Discuss specialized equipment

(1) If owned, provide

(i) Age and condition

(ii) Assessed value

(iii) Fair market value, if known

(2) If leased, provide amount of monthly payment

(c) List and discuss company-owned vehicles

(d) Describe the library

(1) Original cost

(2) Replacement cost

(3) Unique volumes

9. General Outlook (if not covered elsewhere)

10. Other Pertinent Information About the Practice

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APPENDIX 2—MANAGEMENT INTERVIEW LAW PRACTICE

Date:_____

Exact Business Name: _____

Address: _____

_____

Phone: _____

Analyst/Interviewer: _____

The objective of this management interview is to provide us with operational information that will aid us in the valuation of your business. We will keep the information confidential. Describe the following to the best of your ability on a separate sheet of paper, with reference to each item number. If some items are not applicable, please indicate N/A.

1. Interviewee(s)

	Name	Title
(a)	_____	_____
(b)	_____	_____
(c)	_____	_____
(d)	_____	_____

2. Attorneys

(a) List key personnel with title, and approximate annual compensation (with bonuses listed separately)

	Name	Title	Compensation	Bonus
(1)	_____	_____	_____	_____
(2)	_____	_____	_____	_____
(3)	_____	_____	_____	_____
(4)	_____	_____	_____	_____
(5)	_____	_____	_____	_____
(6)	_____	_____	_____	_____
(7)	_____	_____	_____	_____
(8)	_____	_____	_____	_____

(9) _____ _____ _____ _____

(10) _____ _____ _____ _____

(b) Provide an abbreviated curriculum vitae of each attorney, including age, education, board certification, and unusual experience

(c) Describe any limitations of each attorney due to health

(d) Describe life insurance in which the firm is the beneficiary

(e) Describe a typical week for the average partner, including the percentage of time spent in the following areas:

(1) Directly billable

(2) Administrative

(3) Promotion

(4) Civic affairs

3. The Firm

(a) If not correct above, exact name of the firm.

(b) Provide a brief history of the development of the firm, including date firm was established, past partners, important dates, previous locations, etc.

(c) Provide a current organizational chart. Describe the management team including current title, age, length of service, background, the annual salary, and bonus of each person for the current year and the last two years.

(d) Attach a list of all personnel (other than attorneys and the management team) stating the title/function and compensation of each.

(e) List board of directors by name and title, including occupation for outside members.

(f) Describe the growth trends, revenue, and operating capacity (billable hours).

(g) Describe changes in legal services offered that are being considered.

(h) Describe firm responsiveness to seasonal fluctuations. (For instance, does the firm have a disproportionate estate practice susceptible to northern residents?)

(i) Previous and future marketing and advertising plans.

(j) Please describe the office facilities including:

(1) Any land owned

(i) Acreage

(ii) Original cost

(iii) Approximate fair market value

(2) Buildings owned

(i) Age and condition

(ii) Original cost

(iii) Approximate fair market value

(iv) Fire insurance amount

(v) Square feet

(3) Furniture, fixtures and equipment (FF&E). (Since the FF&E schedule has been requested in our valuation information request, there will be no need to duplicate the listing here. What is requested is a discussion of the future plans for significant purchases of FF&E.)

(4) Library

(i) Description by major service and/or groups of works

(ii) Original cost

(iii) Replacement cost

(iv) Unique volumes, if any

4. Other Pertinent Information About the Firm

(a) Any information that will add to (or detract from) the reputation of the firm or the individual practitioners will have a similar effect on the valuation.

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APPENDIX 3—MANAGEMENT INTERVIEW ACCOUNTING PRACTICE

Date:_____

Exact Business Name: _____

Address: _____

_____

Phone: _____

Analyst/Interviewer: _____

The objective of this management interview is to provide us with operational information that will aid us in the valuation of your business. We will keep the information confidential. Describe the following to the best of your ability on a separate sheet of paper, with reference to each item number. If some items are not applicable, please indicate N/A.

1. Interviewee(s)

	Name	Title
(a)	_____	_____
(b)	_____	_____
(c)	_____	_____

2. Accountants

(a) List key personnel with title, and approximate annual compensation (with bonuses listed separately)

	Name	Title	Compensation	Bonus
(1)	_____	_____	_____	_____
(2)	_____	_____	_____	_____
(3)	_____	_____	_____	_____
(4)	_____	_____	_____	_____
(5)	_____	_____	_____	_____

(b) Abbreviated curriculum vitae of each accountant, including age, education, specialty certification, and unusual experience

(c) Accountant limitations due to health, if any

(d) Life insurance in which the practice is the beneficiary

(e) Typical week for the average partner, including the percentage of time spent in the following areas

(1) Directly billable

(2) Administrative

(3) Promotion

(4) Civic affairs

3. The Practice

(a) If not correct above, exact name of the practice

(b) Date practice established

(c) Brief history of the development of the practice, including past partners, important dates, previous locations, etc.

(d) Current organizational chart

(e) List the management team including current title, age, length of service, background, annual salary, and bonus of each person for the current year and the last two years

(f) List all personnel (other than accountants and the management team), stating the title/function and compensation of each

(g) List board of directors by name and title, including occupation for outside members

(h) Growth trends, revenue, and operating capacity (billable hours)

(i) Changes in accounting services being considered

(j) Practice sensitivity to seasonal fluctuations (e.g., does the practice have a disproportionate tax practice)

(k) Sales and marketing strategy

(l) Office facilities, including

(1) Any land owned

(i) Acreage

(ii) Original cost

(iii) Approximate fair market value

(2) Buildings owned

(i) Age and condition

(ii) Original cost

(iii) Approximate fair market value

(iv) Fire insurance amount

(v) Square feet

(3) Furniture, fixtures, and equipment (FF&E). (Since the FF&E schedule has been requested in our valuation information request, there will be no need to duplicate the listing here. What is requested is a discussion of the future plans for significant purchases of FF&E.)

(4) Library

(i) Description by major service and/or groups of works

(ii) Original cost

(iii) Replacement cost

(iv) Unique volumes, if any

4. Other Pertinent Information About the Practice

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CHAPTER 19

Valuation of Healthcare Service Businesses

Performing valuations of healthcare service businesses and interests in those businesses requires fundamental business valuation expertise. It also requires special knowledge of the key economic drivers, trends, healthcare niche issues, and unique regulatory environment prevalent in the healthcare industry. This chapter provides insight into how these unique characteristics impact the valuation of healthcare businesses. We do not focus on the fundamental mechanics of performing a valuation but rather on the unique considerations that must be made in healthcare valuation. We also provide two detailed case studies to illustrate these nuances at the end of this chapter: an ambulatory surgery center (Addendum 1) and a hospital (Addendum 2). These case studies are only general examples since the procedures, methods and amount of detailed analysis can differ from engagement to engagement depending on the purpose and scope of the engagement.

The healthcare industry has its own language. Exhibit 19.1 contains a glossary of terms that may be reviewed to provide a foundation for understanding the healthcare industry.

Exhibit 19.1 Glossary of Terms

501(c)(3)—Refers to Section 501(c)(3) of the United States Internal Revenue Code of 1954. This section deals with nonprofit organizations that are exempt from federal income taxes (i.e., charitable, religious, scientific, and educational institutions).

Acute Care Hospital—A hospital caring for patients with serious debilitating illnesses and injuries; generally, the illnesses and diseases have an average length of stay of 30 days or less; commonly referred to as a short-term hospital.

Ambulatory Surgery Center (ASC)—A facility where physician surgeons perform outpatient surgeries. Generally, the patient is admitted and discharged within a 24 hour period. It is not uncommon for an ASC to perform the following services: Anesthesia, Dental, ENT, General Surgery, Orthopedics, Ophthalmology, Plastic, Podiatry, and Urology.

Ambulatory Payment Classification (APCs)—A prospective payment system for hospital outpatient services. APCs refer to a service classification system designed to explain the amount and type of resources used in an outpatient encounter.

Average Length of Stay (ALOS)—The total average number of days between the time a patient is admitted and discharged from a healthcare facility.

(continues)

Exhibit 19.1 *continued*

Balanced Budget Act of 1997—This revolutionary act, enacted in August of 1997, contained significant changes in Medicare reimbursement for certain areas including skilled nursing services, home health services, and inpatient rehabilitation. Unlike the former reimbursement system whereby reimbursement rates were derived from cost reports subject to review by government agencies, the new Prospective Payment System (PPS) is based on established federal discharge diagnosis rates for a host of services. This new law required that the new PPS be phased in over a three year cost reporting period, beginning with those cost reports on or after January 1, 1999.

Capitation—A flat, periodic payment whereby a physician, hospital, healthcare facility, or healthcare system is compensated on a per-person per-month basis. Under the terms of these agreements, the provider assumes the risk that the fixed monthly payment will cover the costs associated with treating the patient.

Computed Tomograph (CT)—Refers to a technique for making detailed X-rays of a predetermined section of a solid object while blurring out the images of other planes.

Certificate of Need (CON)—A certificate, traditionally issued by a government (i.e., state agency), approving a healthcare facility's request for a specific service or function. In most cases, a CON is required to build, purchase, or occupy a service.

CHAMPUS (now TRICARE)—Civilian Health and Medical Program of the Uniformed Services. A program that pays for medical care administered by civilian providers to retired members (and their related dependents) of the uniformed services of the United States.

Cost-plus reimbursement—A type of reimbursement in which the recipient receives compensation for the costs associated with providing a service plus an additional amount as a fee or profit.

End-stage Renal Disease (ESRD)—The clinical term for kidney failure. This disease can be caused by a number of conditions, including: diabetes, sickle cell disease, hypertension, and congenital renal disease. Individuals with this condition must rely on kidney dialysis to survive.

Free-Standing Outpatient Surgery Center (FOSC)—A facility providing surgeries on an outpatient basis. Although a hospital may own one of these facilities, it is not a physical part of the hospital. In theory, FOSCs can be more profitable than inpatient surgery centers in hospitals since it is not subject to the same cost structures.

Glaucoma Surgery—Refers to a group of eye conditions in which the optic nerve is damaged at the point where it extends from the eye. The main cause of this damage is raised pressure inside the eye (intraocular pressure, IOP).

Managed Care Organization (MCO)—A term applied to those organizations that provide management services for the reduction or control of healthcare costs. Generally, MCOs offer their services to corporations and insurers. Health Maintenance Organizations (HMOs) also fall under this category.

Magnetic Resonance Imaging (MRI)—A special technique that images the internal soft tissue features of the human body. Generally, MRIs are superior in quality to traditional X-ray images.

Medicaid—Founded in 1965, this federal program provides healthcare to indigent persons and those individuals with certain illnesses or diseases. The Medicaid program is administered by the states.

Exhibit 19.1 *continued*

Medicare—Also established in 1965, this federal program provides healthcare to those individuals 65 years and older and to others entitled to Social Security benefits. The Medicare program is administered at the federal level.

Medicare, Part A: Medicare Part A refers to the hospital care portion of this program. Eligible enrollees are: (i) 65 years of age or older, (ii) under 65 years of age but have been eligible for disability for more than 2 years, or (iii) qualify for End Stage Renal Disease (ESRD).

Medicare, Part B: Medicare Part B refers to the part of Medicare whereby individuals who qualify for Part A obtain assistance with the payment for physician services.

Ophthalmology—The subset of medicine that is concerned with the anatomy and treatment of the eye.

Physician Practice Management (PPM)—Refers to the industry that flourished in the early to mid 1990s. Companies using this model purchased independent physician practices and then provided these practices with the necessary business functions (i.e., accounting, human resources, etc.) based on a percentage of the businesses' revenue or cash flow stream.

Prospective Payment System—The name given to the current pricing system for Medicare services. Under this system, patients are grouped under a diagnostic-related group (DRG) for which prices are negotiated and imposed on the healthcare facility.

Tertiary Care—Medical care that is highly specialized in nature. Typically, these types of services are provided in an educational setting, such as a university medical school or hospital.

INDUSTRY BACKGROUND AND TRANSITION

From 1990 through 1998, transactions in the industry were driven primarily by the development of integrated delivery systems, the consolidation of health systems, and the consolidation of the physician practice management industry. The mergers and acquisition (M&A) market in the healthcare industry was very active during that period.

At the heart of the M&A activity in healthcare during the 1990s was an incredible number of transactions involving physician practices. A new company called Phycor emerged with a new business model, which was the beginning of the Physician Practice Management (PPM) industry. By 1997 the PPM industry had became a public market segment with over 30 public companies and $13 billion in public market capitalization. The PPM industry consisted of companies that were created and grown by acquisitions. This segment illustrated a classic rollup or consolidation strategy with public companies being priced based on their acquisition growth, then using the publicly traded stock as currency to continue acquiring physician groups.

Hospitals and healthcare systems believed they could defensively secure patient volumes by owning primary care practices and other referring physicians. As the PPM segment was actively "rolling up" physician practices, hospitals also were competing for physician practices as part of their planned integrated delivery systems.

The rampant market consolidation of physician practices in the 1990s slowed dramatically with the failure of the PPM business model in late 1997 and the financial distress of hospitals and healthcare systems brought on by changes in reimbursement

in early 1998 due to the Balanced Budget Act of 1997 (BBA97). The BBA97 fundamentally changed Medicare reimbursement to hospitals and health systems. The federal government had previously reimbursed hospitals based on their cost to provide services (cost plus reimbursement). The BBA97 converted payments to a prospective payment system or a specific fee for service. There was a significant reduction in payments to hospitals for the provision of services to Medicare patients. Although the hospital market expected those changes from the federal government, hospital management did not adapt quickly, resulting in financial difficulty during 1998 and 1999. In addition, all but several unique PPM companies failed and healthcare systems moved away from the integrated delivery system development strategy.

Another driving force in the M&A market during the 1990s was the consolidation of hospitals and healthcare systems. Columbia HCA Healthcare Corporation (Columbia HCA), a public company, was at the forefront of this consolidation. It was formed in 1994 when Columbia Healthcare Corporation was merged with HCA. Columbia HCA was intent on consolidating the hospital segment through acquisitions. By 1997 it had a portfolio of over 300 hospitals and 120 ambulatory surgery center partnerships. Columbia HCA and other public hospital corporations such as Tenet Healthcare stayed on the acquisition trail throughout much of the 1990s. This acquisition activity caused many health systems, including not-for-profit systems, to seek defensive mergers with other systems. However, the hospital M&A market slowed dramatically in 1998 with the introduction of the BBA97 and the fraud investigation of Columbia HCA brought by the federal government. Because of these financial difficulties, many public and private health systems greatly reduced their acquisition activity.

The current trend, which began in the late 1990s, involves strategic transactions with hospital/physician joint ventures. These joint ventures include ambulatory surgery centers, surgical hospitals, acute care hospitals, diagnostic imaging centers, cardiac cath labs, and other ancillary service lines.

In the mergers and acquisition marketplace, the demand for business valuation services has shifted away from transactions involving physician practices toward these types of joint venture deals.

However, there continues to be a need for valuation services for physician practices in the dispute area, particularly for purposes of marital dissolution. See Chapter 18 for more information on the valuation of professional practices and Chapter 16 on divorce valuations.

HEALTHCARE INDUSTRY'S UNIQUE ATTRIBUTES

The healthcare industry is unique because of the following major factors:

- Size
- Fragmentation

- Aging population and healthcare cost containment trends
- Physician factor
- Healthcare regulatory environment

Size

The healthcare services industry remains the largest component of the U.S. economy, accounting for approximately 14.3 percent, or $1.4 trillion, of the nation's gross domestic product (GDP).[1] The healthcare dollar accounts for approximately one out of every seven dollars spent in America.

The source of healthcare consumer dollars are "payers," which can be broken down into two major components:

1. Federal/state government
2. Employers (insurance companies)/private payers

The federal government is the largest single payer of healthcare services in the United States through the Medicare, Medicaid, and CHAMPUS (now TRICARE) programs. The Medicare program insures those citizens 65 years or older. Medicaid provides reimbursements to those who meet certain economic need criteria. CHAMPUS (Civilian Health and Medical Program for Uniformed Services) insures those individuals who are current or eligible retired members of the U.S. armed forces. The federal government spends approximately $430 billion per year for healthcare services through the Medicare and Medicaid programs. On the private payer side, employers typically purchase health insurance and offer those plans to employees at a discounted rate as part of employee benefit packages.

The provision of healthcare begins with the physician who directs patient care, treats patients, orders diagnostic tests, and performs surgeries. According to the Health Care Financing Administration (HCFA), now known as Centers for Medicare and Medicaid Services, there are approximately 570,000 physicians in the United States that represent an estimated revenue stream of approximately $259 billion.[2] Those physicians represent the starting point or referral source of substantially all of the revenue generated in the healthcare services industry. The remaining expenditures are for hospital care, pharmaceuticals, postacute care, ancillary services, and the like. Physician participation in the healthcare service industry is a unique and very important characteristic of the healthcare industry and will be stressed throughout this chapter.

Fragmentation

The major segments of the industry include:

- Physician services
- Acute care hospital services

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[1] "Health Care Trends for 2001." *Topic of the Month* (February 2001). Tufts Managed Care Institute. *www.tmci.org/other_resources.com.*

[2] "Table 2: National Health Expenditure Amounts." Health Care Financing Administration. *www.hcfa.gov/stats.com.*

- Postacute care
- Ancillary outpatient care (surgery, diagnostic imaging, laboratories, cancer centers, dialysis facilities, etc.)

Within each of these segments there are large multiple niches. The following is a list of segments and niches with their annual estimated revenues:

Healthcare Niche	Projected 2001 Expenditures
Physician practices and clinics	$259 billion[a]
Acute care hospitals	$424 billion[a]
Nursing home care	$ 94 billion[a]
Home health care	$ 36 billion[a]
Rehabilitation facilities	$ 78 billion[a]
Assisted living facilities	$ 12 billion[b]
Ambulatory surgery centers	$ 7 billion[c]
Cancer treatment centers	$ 37 billion[d]
Diagnostic laboratories	$ 32 billion[e]
Dialysis centers	$ 16 billion[f]
Durable medical equipment	$ 19 billion[a]
Institutional and pharmacy service providers	$ 13 billion[a]

NOTES:
[a] "Table 2: National Health Expenditure Amounts." Health Care Financing Administration. *www.hcfa.gov/stats.com.*
[b] Sunrise Assisted Living 10K as of December 31, 2000. *www.sec.gov/Archives/Edgar/data.*
[c] SMG Marketing Database.
[d] IMPATH, Inc. 10K as of December 31, 2000. *www.sec.gov/Archives/data.*
[e] Unilab Corporation 10K as of December 31, 2000. *www.sec.gov/Archives/data.*
[f] Rental Care Group 10K as of December 31, 2000. *www.sec.gov/Archives/Edgar/data.*

The two largest segments, physician services and hospitals, clearly illustrate the fragmented nature of the healthcare services industry. This is discussed below.

Physician Services

The majority of the estimated 570,000 physicians operate in small group practices or as sole practitioners. As previously mentioned, large-scale consolidation of physician practices has proven to be unsuccessful; physician practices have proven much more difficult to organize than other nonprofessional components of healthcare.

Hospitals

According to the American Hospital Association, the acute care hospital segment in the United States consists of 5,890 hospitals. Only 747 hospitals operate as investor-owned for-profit facilities, some of which are part of publicly traded hospital cor-

porations. In addition, approximately 3,012 are community not-for-profit, 1,197 are state and local government community hospitals, 264 are federal government hospitals, 649 are long-term care hospitals, and 21 facilities are units of institutions (prisons, college, etc.). Approximately 87 percent of the hospital market consists of not-for-profit or tax-exempt hospital facilities.[3]

Aging Population and Cost Containment Trends

The United States population is getting older. Seniors over the age of 65 are the fastest growing segment of our population. The baby boomers in the United States, those born between 1946 and 1964, will cause that trend to continue. According to the U.S. Census Bureau, there were approximately 39 million people over the age of 65 in 2000. The Census Bureau also estimates that by 2010, this segment will exceed 43 million people. By the year 2025, when many of the baby boomers have reached the age of 65, the senior population is estimated to be 71 million. As a result, the demand for healthcare services over the next 25 years will increase not only with population growth but also by way of greater per-capita utilization as the largest group of our population enters their senior years. The projected cost of that care to the federal government has been the topic of heated political debate.[4, 5]

Over the last 15 years, employers and the federal government have looked to health insurers to provide solutions to these escalating costs. During that time, managed care organizations (MCOs) were developed by insurers to reduce and/or control escalating healthcare costs. A significant shift in the economics and the operations of the healthcare industry came with the development of insurance products provided through health maintenance organizations (HMO) and preferred provider organizations (PPO).

HMO insurance products were introduced as an option to control the cost of care to employers and employees. The HMO product is a fixed-fee premium product that has very minimal additional costs (copays) to patients as they utilize healthcare services. However, by accepting the larger insurance risk, the insurers (MCOs) have stepped in to control this risk by dictating to physicians the conditions under which referrals are made and services rendered. As a result, many consumers, attorneys, and physicians have argued that insurance companies illegally dictate how care is to be given, i.e., illegally practice medicine.

PPOs are another form of product that is offered by commercial insurance companies. The difference between HMOs and PPOs are economic in nature, with PPO premiums higher than HMO premiums. In addition, there are additional costs associated with deductibles and copayments for services rendered. The offset to the higher cost in PPO products is greater choice of physicians and healthcare facilities. PPO products also allow patients to receive care out of the PPO network for an additional fee that is not as onerous as receiving care out of network in an HMO.

The federal government has embraced the HMO concept through the development of senior HMO risk products. By allowing MCOs to accept a fixed or capitated rate for services, the federal government shifts the risk to the insurance

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[3] American Hospital Association. *www.aha.org/resource/newpage.asp*.

[4] "National Population Projections," U.S. Census Bureau, January 2000. *www.census.gov/population/www/projections/natsum-T1.htl*.

[5] "Demographic Trends," National Academies, Institute of Medicine. *www.iom.edu/iom/iomhome.nsf/wfiles/informingthefuture/$file/informingthefuture.pdf*.

company. Many insurance companies have discontinued their Medicare risk programs because they are unprofitable. The difficulty stems from the high utilization of services by seniors who typically utilize healthcare services at a rate that is three to five times higher than the average nonsenior.

The federal government passed the Balanced Budget Act of 1997 in part to address escalating healthcare costs. The result of BBA97 was a significant reduction in reimbursement of healthcare services for Medicare-eligible patients. It shifted reimbursement of many hospital services from a cost plus reimbursement methodology to a prospective pay system. The change in reimbursement placed many hospitals and health systems in financial distress. Many hospitals eliminated or reduced the provision of certain hospital services, such as skilled nursing units, home healthcare, and physical therapy, because of an inability to generate reasonable profits. In addition, many companies participating in the long-term care segment were forced to file bankruptcy. The federal government, through legislative action, is requiring health service providers to operate more efficiently. There will no longer be any financial incentive or reward to have high cost of care services.

As the aging population continues to grow and further tax the healthcare system, the federal government and commercial insurers will continue to implement cost cutting measures. These cost-cutting measures will most likely take the form of reduced reimbursement. In addition, there will be pressure to move healthcare services from higher-cost-of-care settings to lower-cost–of-care settings, such as ambulatory surgery centers.

ValTip

Reimbursement is a critical assumption in the financial projections of healthcare organizations. Many analysts make the inaccurate assumption that reimbursement will continue to increase at the national inflation rates. Analysts must first understand the payer mix of the business being valued, including how specific payers reimburse for services and the prospect for future changes in that reimbursement.

Analysts can utilize the *Federal Register* to understand Medicare reimbursement for specific procedures. Changes in Medicare reimbursement typically are published in advance by the federal government. For example, on September 8, 1998, HCFA published the Notice of Proposed Rulemaking that initiated the prospective payment system for certain hospital services reimbursed by Medicare. Hospital outpatient surgery departments became subject to the new Ambulatory Pricing Classification (APC) reimbursement in the year 2000. The rates were published in September of 1998, so the new reimbursement rates were known two years in advance.

In many situations, the reimbursement for specific procedures can vary dramatically. In 1998 the published rate for Medicare reimbursement for a freestanding outpatient surgery center on CPT code number 66170, glaucoma surgery, was proposed to be $415 upon implementation of the new APCs. The current Medicare reimbursement for that procedure is $595. In this example the risk that the glaucoma surgery revenue will have a dramatic decline on implementation of the APCs is high.

ValTip

The volatility of reimbursement for individual procedures can be very high. It is important to consider prospective reimbursement changes when performing the valuation analysis.

Physician Factor

The single largest factor impacting the valuation of healthcare organizations is the recognition that a physician and only a physician can perform surgery, admit a patient to a hospital, order a diagnostic imaging test, perform a cardiac catheterization procedure, and so on. The starting point for understanding and ultimately valuing any healthcare service organization is to understand how physician practice patterns impact risks and ultimately the cash flow of the subject healthcare business.

ValTip

Individual physicians exert a significant amount of control over the direction of patient referrals to healthcare service providers.

Example: A single-specialty ophthalmology outpatient surgery center is performing over 6,000 ophthalmic surgery cases per year, generating $6.0 million in net service revenue (the net revenue of the surgery center net of contractual allowances-GAAP [generally accepted accounting principles] accrual net revenue) and $2.7 million in earnings before depreciation interest taxes and amortization (EBDITA). The center has exhibited a 10-year track record of profitability and growth. However, one ophthalmologist represents 80 percent of the volume.

This same ophthalmologist sold his surgery center to the current owners five years ago and simultaneously entered into a five-year covenant not to compete (relating to competition in the outpatient surgery business). That covenant not to compete will expire during the first year following the valuation date. In addition, the barriers to entry in the surgery center business are very low. There are no requirements for a certificate of need (CON) and the cost of the project can be financed primarily with debt. Therefore, the shareholders of the center are at risk of experiencing major loss of revenue if the key ophthalmologist:

- Decides to move out of the service area
- Is disabled and can no longer perform surgery
- Dies
- Retires
- Decides to compete

If any of these events occurs, the surgery center may lose 100 percent of its intangible asset value. Many valuation analysts do not properly identify this risk. A common mistake is to assume that the key ophthalmologist is replaced at similar volume levels. The replacement of a physician and the related revenues may be difficult in a community where the physician previously has built significant professional goodwill. As a result, this assumption may be erroneous and could lead to an overvaluation.

The actual results of operations of the ophthalmalic practice in the example were that the key physician left and volume deteriorated to a run rate of 1,000 cases per year from a run rate of 6,000 cases in a period of one month. The EBDITA in the surgery center went from $2.7 million annually to a net operating loss over the same period of time.

The opposite end of the physician factor spectrum would be a very large 450-bed tertiary care acute care hospital that exhibits the following characteristics:

- Very large barriers to entry—capital costs in excess of $200 million
- Revenue stream in excess of $250 million
- EBDITA of $50 million
- 250 physicians on staff, multiple specialties and subspecialties
- No one single physician represents more than 5 percent of the net revenue of the hospital
- Very strong managed care contracts
- Long history in the community

The physician factor risk profile of the hospital compared to that of a single-specialty ophthalmology center is very different. However, some valuation analysts might attempt to value both businesses using the same rules of thumb (e.g., x times EBDITA). Failure to understand the underlying risk/reward relationship in the valuation of healthcare firms can result in erroneous opinions of value.

Understanding how the "physician factor" impacts the volume of patients in a subject healthcare business is one of the very first steps that should be performed in valuation. Exhibit 19.2 presents several questions that should be answered as part of the valuation process for a healthcare business.

Exhibit 19.2 Physician Factor Evaluation

In order to properly evaluate the physician factor, the following questions must be answered and understood by the valuation analyst.

1. Does a physician dictate volume in a particular healthcare service entity (in most cases the answer is yes)?
2. Which physicians are primarily responsible for the current patient volume?
3. Are there any physicians that represent a significant percentage of the volume?
4. What is the age and expected remaining professional practice term of each physician?
5. What competition exists for the subject entity in the immediate service area?
6. Which key physicians might have compelling reasons to leave the subject entity and what might these reasons be?
7. Are there any barriers to exit or entry that would deter a departing physician from competing with the subject entity?

Healthcare Regulatory Environment

The federal government has not overlooked the importance of the "physician factor" to the economics of healthcare. As a result, healthcare service providers are subject to an array of federal and state regulations that address the relationship between physicians and healthcare services businesses. In addition, the dominance of tax-exempt organizations in the healthcare industry has created heavy involvement by the Internal Revenue Service (IRS) in the operations, structure, and transactions of healthcare organizations.

The following laws are an important part of the healthcare regulatory environment:

- Federal antikickback laws (fraud and abuse law and regulations)
- Stark laws and regulations
- IRS private inurement regulations (impacting tax exempt organizations)
- State anti-kickback and self referral laws

Federal Antikickback Laws

The most notable of the Medicare/Medicaid fraud and abuse provisions of the Social Security Law is 42 USC 1320a-7a(b), which is commonly referred to as the antikickback law. The antikickback law makes it a felony to offer, pay, accept or solicit payment for the referral of, or the arranging for the referral of, items, services or patients reimbursed by any federal or state healthcare program. Specifically, the law prohibits the willful and knowing offer, solicitation, or receipt of any remuneration (including any kickback, bribe, or rebate), directly or indirectly, overtly or covertly, in cash or in kind, for (1) referring an individual for an item or service reimbursed by a federal or state healthcare program; or (2) purchasing, ordering, arranging for, or recommending the purchase, lease or order of any good, facility, service, or item covered under any state or federal healthcare program.

Violations of the antikickback law are treated as felonies and are punished by up to five years' imprisonment per violation and/or a $25,000 fine per violation. The Balanced Budget Act of 1997 also added a penalty of up to $50,000 per violation plus three times the remuneration offered. In addition, civil sanctions include exclusion from participation in federal and state healthcare programs.

Safe Harbors to the Antikickback Statute

Because the statutory language prohibiting kickbacks is so broad, Congress amended the antikickback statute law in 1987 to require the development of safe harbor regulations. The intent of this amendment was to specify certain business practices that would not be treated as violations of the antikickback statute. The safe harbors were clarified and amended over a 12-year period culminating in the release of the final regulations on November 19, 1999, entitled "Clarification of the Initial OIG Safe Harbor Provisions and Establishment of Additional Safe Harbor Provisions Under the Anti Kickback Statute" (64 *Federal Register* 63518, November 19, 1999).

ValTip

Valuation analysts should understand that the level of scrutiny may be very high when providing opinions of fair market value that could be subject to the antikickback laws. A very large number of transactions are subject to the antikickback regulations.

A significant number of healthcare business valuations are required as a result of the antikickback statutes. If the following fact pattern exists, the valuation will be subject to the criteria of the fraud and abuse regulations:

- Subject healthcare business receives reimbursement from a federal program (Medicare, Medicaid, CHAMPUS).
- There is a referral relationship involved between the parties involved in a transaction, for example, a physician/hospital joint venture of an ambulatory surgery center.

ValTip

It is important to identify applicable situations and possibly seek advice from healthcare attorneys as to the fraud and abuse implication of valuations performed in the healthcare services industry.

Stark Laws

The Stark laws were originally contained in section 6204 of the Omnibus Budget Reconciliation Act of 1989 (OBRA 89). The law was amended in section 4207 of the Omnibus Reconciliation Act of 1990 (OBRA 90) and was extensively revised by section 13562 of the Omnibus Reconciliation Act of 1993 (OBRA 93). The intent of the laws was to limit the ability of physicians to retain a financial relationship in entities that provide certain services to which the physicians are in a position to refer patients. Financial relationship is defined as an ownership or investment interest in the entity providing services or a compensation arrangement between a physician (or immediate family member) and the entity. OBRA 93 modified the prior law to apply to referrals for 10 "designated health services" in addition to clinical laboratory services. Section 152 of the Social Security Act Amendments of 1994 (SSA 94) enacted on October 31, 1994, amended the list of designated health services, effective January 1, 1995. The final rule of the Stark laws was published on January 4, 2001. The title of the Healthcare Finance Administration 42 CFR Parts 411 and 424 is *Medicare and Medicaid Programs; Physicians' Referral to Health Care Entities With Which They Have Financial Relationships; Final Rule*.

The federal government has provided a list of 10 categories of services that physicians are prohibited from owning, called Designated Health Services:

1. Clinical laboratory services
2. Physical therapy services
3. Occupational therapy services
4. Radiology services, including magnetic resonance imaging (MRI), computed tomography (CT), and ultrasound
5. Radiation therapy services and supplies
6. Durable medical equipment and supplies
7. Parenteral and enteral nutrients, equipment, and supplies
8. Home health services
9. Outpatient prescription drugs
10. Inpatient and outpatient hospital services

The intent of the Stark II regulations is not only to prohibit referring physicians from owning an interest in businesses to which they refer but also to require that contractual relationships between referring physicians and parties to which they refer are consummated at fair market value. The Stark II regulations actually define a valuation term called "market value," which requires emphasis on commercially reasonable standards and cannot be based on the value or volume of referrals from a particular physician as defined.

Exceptions to the Stark II regulations allow physicians to own interests in certain entities included in the designated health services list. Two key exceptions are (1) the whole hospital exception and (2) the group practice exception. Physicians are permitted to own interests in whole hospital facilities that include designated health services. They also are permitted to own and provide designated health services as a component of their group practice. As with all healthcare regulations, detailed components to each set of laws may require an analyst to consult with a qualified healthcare regulatory attorney to understand the complex nuances of each set of regulations.

ValTip

Appropriately factoring the regulatory environment into the valuation is important when valuing healthcare businesses.

IRS Private Inurement and Private Benefit

A hospital or healthcare organization that is exempt from tax must be operated exclusively for charitable purposes. No part of an exempt hospital's net earnings may inure to the benefit of a private shareholder or individual. The primary purpose of the exempt hospital must remain to serve the public interest rather than a private interest. Revenue Ruling 69-545, 1969-2 C.B. 117, establishes the community benefit standard for the exemption of healthcare providers. It focuses on a number of

factors indicating that the operation of a tax-exempt entity, such as a hospital, benefits the community rather than serving private interests. An organization cannot be operated exclusively for charitable purposes unless it serves a public rather than a private interest. Thus, to meet the requirements of IRC 501(c)(3) as a tax-exempt entity, an organization must establish that it is not organized or operated for the benefit of private interests. Private inurement generally involves persons who, because of their relationship with an organization, can control or influence its activities. As such, the payment for businesses that exceed fair market value may cause an organization to lose its tax-exempt 501(c)(3) status.

It may be necessary to consult a qualified tax lawyer to understand how to appropriately consider the tax laws when valuing a business that involves a tax-exempt enterprise.

Regulatory Environment and the Standard of Value

As a result of the fraud and abuse regulations, Stark laws, and private inurement requirements, many healthcare transactions are required to be consummated at fair market value. Fair market value is defined in the tax regulations as "the price at which property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of the relevant facts." The most notable transactions are between physicians and hospitals or any party to which they refer, where the physician might gain a prohibited economic benefit.

If a valuation is being performed as a result of regulatory requirements, the valuation must apply the fair market value standard of value.

The following types of transactions are subject to the state and federal fraud and abuse regulations. To the extent that a transaction between a physician and a hospital exhibits one of the following characteristics, the federal government will take the position that referrals were being purchased or, in the case of a tax-exempt organization, that the tax exemption was being inured to the benefit of the non–tax–exempt organization.

- Physician sells surgery center to hospital for greater than fair market value.
- Physician buys interest in surgery center for less than fair market value.

- Physician buys interest in a hospital for less than fair market value.
- Physician sells interest to hospital for greater than fair market value.

Investment Value

There are several differences between fair market value and investment value. Investment value can be defined as the related value of a particular asset or service to a particular individual or entity. In other words, the investment value of a particular piece of property differs from buyer to buyer. Hence, investment value takes into consideration a specific buyer and seller. Fair market value does not assume a specified buyer or seller, but rather the hypothetical buyer(s)/seller(s) in the marketplace. See Chapter 1 for a more detailed discussion concerning standards of value.

The federal government takes the position that if a buyer (subject to the regulations) purchases a business or business interest from a potential referral source at greater than fair market value, there has been a monetary inducement for referrals. As a result, investment value transactions are less common. Publicly traded or proprietary healthcare companies sometimes enter into transactions that exhibit investment value. This should be noted and considered when analyzing publicly available transaction data.

OVERVIEW OF CONSIDERATIONS FOR VALUING HEALTHCARE ENTITIES

Understanding the Market and Economic Drivers for the Industry Niche

Performing a healthcare valuation requires that the valuation analyst have a thorough understanding of the market in which the subject healthcare entity operates as well as the economic drivers for each specific healthcare niche. These factors will affect the volume of service and the risk associated with that volume.

Understanding the Impact of Healthcare Laws and Regulations

Prior to accepting the engagement, the valuation analyst should have an understanding of the healthcare laws and regulations that might impact the valuation process. For example, the engagement might involve a fair market value opinion of a diagnostic imaging center partnership that has individual referring physician ownership. Since diagnostic imaging is a designated health service as defined by Stark II and cannot have referring physician ownership, the analyst may be unable to provide the fair market value of an entity that has been illegally structured. In fact, if there is any question about the legality of a business structure, a regulatory attorney should be consulted.

Understanding the Motivations and Economic Drivers of the "Typical Buyer" in the Marketplace

Two groups most commonly represent the typical buyer in the healthcare marketplace:

1. Local and regional not-for-profit healthcare systems
2. National or regional for-profit specialty healthcare service firms

The motivations and economic drivers for these two potential buyers are widely divergent. The not-for-profit healthcare system is driven by the requirement to serve the local community's healthcare service needs and generally reinvests significant levels of capital back into the community health system. The not-for-profit healthcare organization always must be cognizant of the regulations necessary to maintain its tax exempt status. The board of directors of the tax-exempt hospital typically will require that third-party appraisers are engaged to determine the fair market value of a prospective entity for the purposes of supporting the price of a transaction.

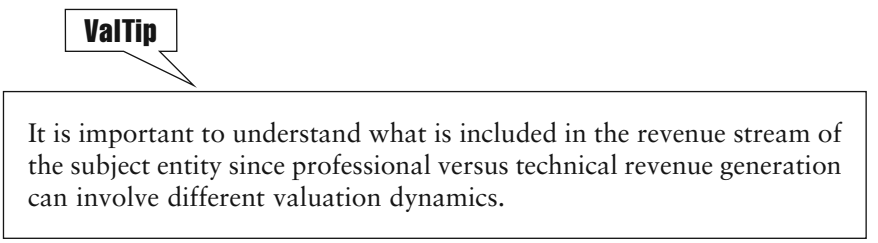
The national or regional for profit healthcare provider is driven by two factors:

1. Providing high-quality services that successfully compete with the not-for-profit providers
2. Generating a return to the equity investors of the corporation

These factors will definitely change the dynamics of and motivations for transactions. The standard of value may shift from fair market value (the standard for not-for-profits) to investment value if the regulatory environment allows. This difference in standards of value can create an uneven playing field as not-for-profit entities compete with for-profit entities.

Understanding the Types of Revenues Generated by Healthcare Entities

There are two types of revenue in healthcare services, "technical" and "professional." The technical revenues in healthcare represent the reimbursement levels related to the facility, equipment, supplies, other operating expenses, and capital costs associated with the provision of care. For example, a hospital is reimbursed a technical fee for the services associated with a surgical procedure. Surgery requires a licensed hospital or outpatient facility, operating room, supplies, staff, and other operating and capital expenses to perform the procedure. The technical fee represents the cost of services excluding the physician's professional fee. The physician professional fee is called the professional component of reimbursement. A combination of technical fees and professional fees is known as a global fee.



VALUATION PROCESS

Fundamental Understanding

The valuation process should begin with a discussion with the client pertaining to:

- Standard of value
- Date of valuation

- Purpose and use of the valuation
- Specific business or interest to be valued

These fundamental factors set the foundation for the remaining steps of the engagement:

- Information gathering
- Valuation approaches and methods
- Income approach

Information Gathering

The information-gathering process can be challenging and time consuming for healthcare valuations. Many entities operate on a cash basis and do not have audited financial statements. In addition, many are small and do not have the administrative resources needed to facilitate information gathering. As a result, the quality of information obtained may vary widely and careful attention must be paid to anomalies. If the analyst does not have healthcare expertise, an industry expert may need to be consulted.

Valuation Approaches and Methods

Similar to any other business valuation, the three primary approaches to value—income, market, and asset—should be considered. Selecting the appropriate valuation methodology, as always, depends on the facts and circumstances of the subject business being valued. However, most healthcare services businesses that are going concerns are valued with heavy reliance on the income approach due to the nature of service businesses. The market approach has less applicability due to limitations on the quantity and supportability of the underlying data. Under the asset approach, the value of the underlying net tangible assets of healthcare organizations is typically less than the overall value of the organization such that the intangible component of value can be the largest percentage of the overall value. The primary exception to this rule is in the valuation of some acute care hospitals that have significant investment in land, buildings, improvements, equipment, and working capital.

Income Approach

For transaction-based valuations, the discounted cash flow (DCF) method of the income approach is typically one of the primary methods that is used to value healthcare service businesses. The DCF allows the analyst to work with very detailed assumptions regarding volumes, reimbursement, payer mix, growth, staffing levels, staffing costs, medical supply costs, occupancy costs, other operating expenses, capital expenditures, and working capital. When analyzing projections, it is important to consider these components:

- Net patient revenue
- Operating expenses
- Working capital requirements
- Capital expenditures

Net Patient Revenue. Net patient revenue is the product of volume and charges (gross patient revenue) less contractual allowances. The contractual allowance is the difference between the charges and the amount that payers are contractually obligated to reimburse the provider for services.

Obtaining a concrete picture of the volume of patient flows and the charges associated with the types of procedures being performed by the subject entity will help quantify gross patient revenue. Since volumes are dependent on physician activity, the following information will be useful when analyzing current volumes and developing volume projections for the subject entity:

- The source of volume at the physician and physician specialty level
- Changing practice patterns of utilizing physicians
- Competition in the service area that could impact existing volume
- Population growth and demographic changes in the service area

The final component of the projection of net revenue is the reimbursement to be received on patient charges. However, this is not a straightforward issue since the payer mix will determine the anticipated amount of reimbursement to be received. The analyst must understand the subject company's payer mix for various services/procedures, and, if necessary, tie this to the Medicare reimbursement schedules in the *Federal Register*, and use these data to evaluate reimbursements used in the net revenue projections.

ValTip

A negative reimbursement trend for certain healthcare services is not uncommon. It may be erroneous to assume, without performing a reimbursement analysis, that reimbursement will increase at inflationary rates.

Operating Expenses.

- **Salaries, Wages, and Benefits.** This is typically the largest expense for healthcare service businesses. It is appropriate to analyze the staffing patterns and projected staffing as a function of patient or procedure volume in the business.
- **Medical Supply Costs.** Supply costs are a significant cost for most healthcare service businesses. Supply costs should also be analyzed and projected based upon volume.
- **Occupancy Costs.** These costs are relevant if the company rents its property. Typically occupancy costs include utility costs.
- **Insurance.** Liability insurance can be a significant cost.
- **Bad Debt.** This expense can change significantly from year to year, and can be benchmarked against other facilities to consider the reasonableness of the expense.

- **General and Administrative.** This category includes telephone, postage, office expenses, travel, entertainment, marketing, management fees, and other administrative costs.

As in other industries, the operating expenses of a healthcare firm are both fixed and variable. Most of the variable expenses, although related to revenue, are really a function of volume.

ValTip

One of the erroneous assumptions sometimes made in healthcare valuations is that variable expenses are always solely a function of revenue.

Salaries and medical supplies vary with the number of procedures performed rather the net revenue of the business. Even when reimbursement revenues are flat or declining, staffing and medical supplies continue to be affected by volume. If volumes continue to grow, staffing and supplies must keep up. Over the last five years, profit margins of some healthcare services businesses have declined because reimbursement has been flat or, in some cases, declined, while volumes continued to grow, increasing the costs associated with employees and supplies.

ValTip

The net result of volatile reimbursement levels for some healthcare entities is declining margins. Valuation professionals must carefully track variable costs.

Working Capital Requirements. Working capital for a typical healthcare service business includes cash, accounts receivable, inventory, and prepaid expenses, less vendor payables and other current liabilities. Accounts receivable is usually the most significant component of working capital. Working capital costs often are based on a reasonable level of working capital in the business as compared to similar businesses. It is common for normal working capital requirements to be between 10 and 25 percent of net revenue for healthcare services firms.

Capital Expenditures. Depending on the type of healthcare entity, capital expenditure assumptions can have a dramatic impact on the valuation. Issues that must be considered include age and condition of equipment, technological obsolescence, historical capital expenditures, and plans for any nonroutine capital expenditures.

INCOME APPROACH DISCOUNTED CASH FLOW METHOD: DEVELOPING A DISCOUNT RATE

The next step in a DCF analysis is the development of a discount rate. Although direct equity methods can be used, the invested capital method of the income approach, using the weighted average cost of capital (WACC), is more common in the acquisitions area. Both direct equity and invested capital models are used in other areas such as tax and litigation.

To derive the equity return within the WACC, analysts can use the build-up method or the Capital Asset Pricing Model (CAPM). One of the most challenging issues in using the CAPM to develop a discount rate for a healthcare entity is the selection of beta. The healthcare industry has been less volatile than the rest of the stock market for several years. The extreme volatility in the stock market has forced the current beta for the healthcare services industry to be significantly less than one. Using CAPM with low betas (0.5 to 0.7) can cause the equity return to be much lower than other industries. Analysts must consider the reasonableness of a low beta and whether it applies to the subject business.

Income Approach Discounted Cash Flow Method: Estimate of Value

If performed properly, the DCF typically yields a valuation that most effectively considers the facts, circumstances, and risk of the cash flow of a particular business. See Chapter 4 (Income Approach) and Chapter 5 (Rates of Return) for more detailed information.

Market Approach

Two accepted methodologies may be considered in the valuation of healthcare businesses utilizing the market approach:

1. Guideline public company method
2. Guideline company transactions method

Guideline Public Company Method

The guideline public company method uses similar publicly traded companies (if available) as sources for market multiples that are used to determine the value of the subject entity. Market multiples may include:

- Invested capital/sales
- Invested capital/EBITDA
- Invested capital/EBIT
- Price/net income

Based on the comparability of the public companies, adjustments are made to the market multiples that are then applied to the subject company. See Chapter 6 for a more detailed discussion of the guideline public company method.

Information on public healthcare companies can provide an analyst with an overview regarding financial characteristics of companies engaged in the same niche as the subject company. However, utilizing publicly traded company valuation data

is very difficult. In the healthcare industry, publicly traded companies are valued based on such characteristics as size, diversification, growth (acquisitions), access to capital, and so forth, factors that simply are not present in most single-location or single-market healthcare businesses. For example, publicly traded hospitals sometimes trade above nine times EBDITA. However, individual hospitals often are priced in the range of four to seven times EBDITA. As a result, publicly traded comparable company multiples are often not applicable.

ValTip

Historically, public healthcare companies have been acquisitive and have had high valuation multiples. As a result, the multiples generated by public companies are usually not comparable to those of small private businesses.

Guideline Company Transactions Method

The guideline company transactions method involves developing the pricing multiples from tranactions of similar companies in the marketplace and applying these multiples to the subject company. The information is synthesized through a number of different sources including Securities and Exchange Commission 8-K reports, Irving Levin and Associates Healthcare M&A report, *Mergerstat Review*, *Done Deals,* and *Pratt's Stats*. The benefit in utilizing individual transaction data is that the companies often are more similar in size and may be affected by similar economic factors.

The drawbacks to utilizing these data include:

- Lack of disclosure of all transaction terms
- Facts and circumstances that may differ dramatically between the target company being analyzed and the subject company

The information needed to appropriately analyze market transactions include:

- Terms of purchase agreement
- Historical financial and operational information of target company
- Facts, circumstances, history, and outlook of the target company

Detailed private transaction data such as that listed above is rarely made available to the public. The details of a purchase agreement include price, consideration paid, assets and liabilities included, assets and liabilities excluded, post-closing adjustments, conditions, and warranties of the transaction. Publicly available information such as transaction announcements typically exclude the data necessary to perform a reasonable guideline transaction analysis. Without thoroughly analyzing the data, it is very difficult to develop reasonable pricing multiples.

ValTip

Many analysts try to force the use of guideline company transaction multiples. This can increase the risk of a flawed valuation. Unfortunately, rarely is the information at the level of detail necessary to perform a supportive guideline company transaction analysis. However, they can sometimes be used as a general reasonableness test depending on the situation.

If the valuation analyst follows the industry closely and develops relationships with those responsible for buying and selling healthcare businesses in each niche, he or she can develop general ranges of market multiples for transaction pricing and use them as a test for reasonableness.

Asset Approach

The asset approach is applicable in those situations in which the value of the underlying assets of the business are greater than the values derived from the income and market approaches. Underperforming healthcare entities sometimes experience this situation.

The asset approach begins with proper identification of the tangible and intangible assets of the entity. A typical asset base can include:

Tangible Assets

- Working capital
- Furniture
- Leasehold improvements
- Medical and other equipment
- Real estate

Intangible Assets

- Trained workforce
- Customer contracts
- Trade name
- Covenants not to compete
- Managed care relationships
- Customer/patient relationships
- Leasehold interests
- Proprietary software

If the analysis requires significant fixed assets or real estate valuation, a qualified appraiser in each area may be engaged. If the underlying profitability of a healthcare entity decreases significantly because of systematic changes in the industry, such as reimbursement, the underlying assets of the business may experience economic obsolescence. The assets may no longer be able to generate an adequate rate of return over their remaining economic useful lives. Many assets in healthcare,

such as buildings, improvements, and equipment, are single purpose by nature. As the economics of the industry change, so can the underlying value of the tangible assets. Obsolescence of assets should be considered when performing an asset approach to value. See Chapter 7, Addendum 1 (Understanding Real Estate Appraisals) and Addendum 2 (Understanding Machinery and Equipment Appraisals) for more details on tangible asset valuations.

MINORITY DISCOUNTS

Minority discounts should be considered when determining the value of minority ownership interests in a healthcare entity (see Chapter 8). Control interests are usually more valuable than minority interests on a pro rata basis. Although the issue of control is very broad and may encompass several factors, some common prerogatives of control are:

- Appointment of management and the determination of their compensation
- Setting business policy and control of the day-to-day operations
- Acquisition or liquidation of assets
- Acquisition of other companies or the sale of the company itself
- Selection of customers
- Acquisition or sale of treasury shares
- Control of dividends, distributions, and contributions
- Change or amendment of the articles of incorporation
- Dilution or constriction of ownership

One of the differences in minority discounts for healthcare businesses is that many healthcare joint ventures and partnerships are structured to minimize the disadvantages of minority ownership. Partnerships that involve physician ownership include surgical hospitals, ambulatory surgery centers, diagnostic imaging centers, cardiac cath labs, and other ancillary businesses. A common feature of a healthcare partnership is a provision for regular (quarterly and semiannual) distributions based on a formula or protocol.

Minority partners (physicians) in most healthcare partnerships are also customers of the business. Management in hospitals and ancillary healthcare businesses, such as surgery centers, typically provide utilizing physicians very high levels of input in the day-to-day operations of the business. In addition, physician owner/customers usually are asked to provide input related to clinical policies and practices. If the physician owner/customer is not satisfied with management of the operations, they typically do not practice at that location. The underlying operating agreements and specific facts and circumstances should be considered carefully before applying a minority discount.

ValTip

Some minority interests in healthcare businesses do not exhibit the general characteristics that affect the magnitude of discounts in other closely held businesses.

DISCOUNTS FOR LACK OF MARKETABILITY

Marketability relates to the ability of an investor to convert the ownership interest to cash quickly, incur minimal transaction and administrative costs, and enjoy a relatively high degree of certainty of realizing the expected amount of net proceeds (see Chapter 8). Although the issue of marketability discounts is very broad and may encompass several factors, the key areas considered are:

- Restrictions on transfer of shares
- Availability of a ready market
- Approach and method of value

As with minority discounts, many healthcare partnerships are structured with provisions that minimize the issues associated with lack of marketability:

- Regular distributions typically are paid, making the interest more desirable.
- The qualified buyers of a partnership are peers (i.e., surgeons/customers), which creates a built-in market.
- Many operating or partnership agreements provide buy/sell provisions that often define the calculation of value or require a value analysis in advance of the sale of an ownership interest.

ValTip

The analyst should read the operating and/or partnership agreement to determine the level of minority or marketability discount.

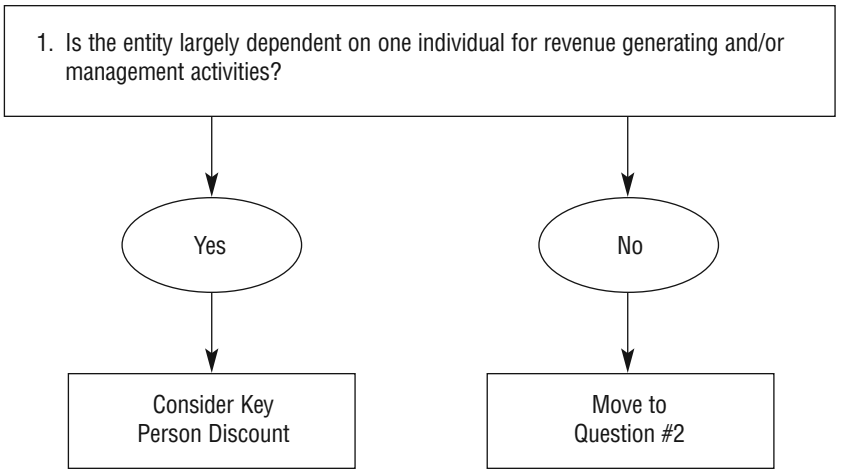
KEY PERSON DISCOUNT

Since the success of a healthcare entity is largely dependent on a few key people or on a single person, a discount may be warranted to reflect the impact of the potential lack of availability of the key person's services. Many small healthcare firms employ an owner or other management personnel who have relationships with referring physicians or with customers, such as hospitals, that are very difficult to replicate.

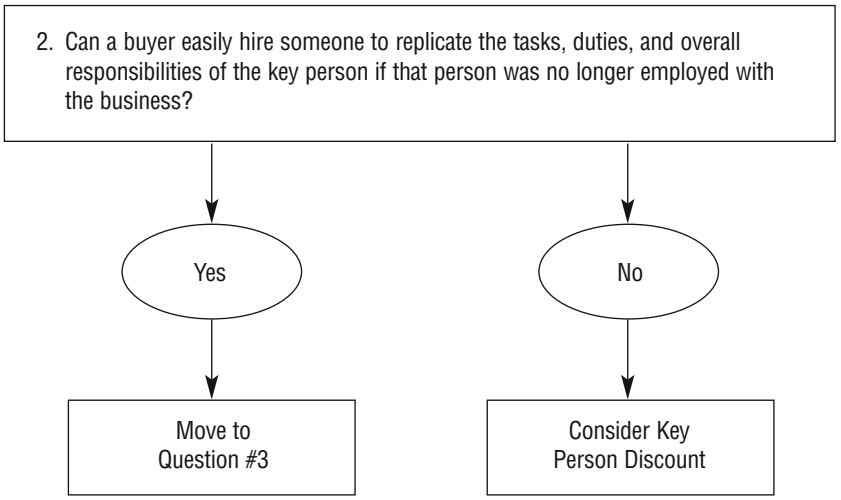
Exhibit 19.3 illustrates three questions to be asked when assessing what key person discount (if any) should be applied.

Each of these factors is important in determining whether a key person discount is applicable. In many healthcare businesses, the key person may be a physician who represents a high percentage of the volume being performed in that business.

Exhibit 19.3 Three Questions for Key Person Discount



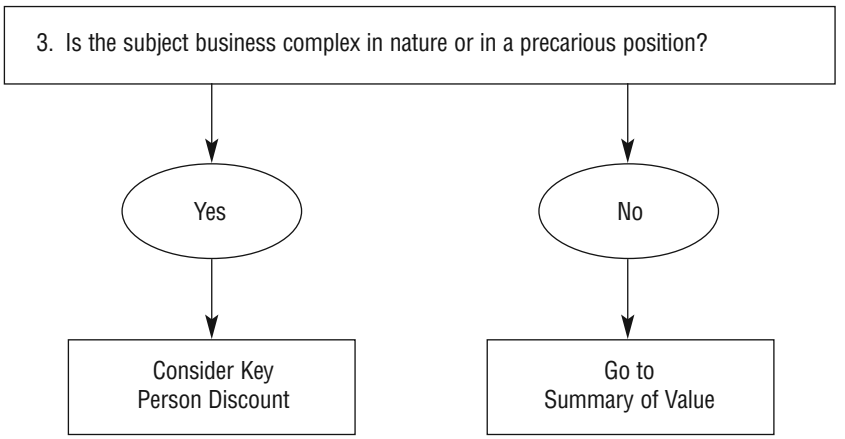
It is important to identify the roles and responsibilities of the key person, or executive. A key person may contribute value in both the day-to-day revenue generating and/or management activities and from strategic judgment responsibilities based on long-standing contracts or agreements.



It is important to assess the buyer's ability to replicate the key person's role and responsibilities. Ideally, a strong, stable entity has a smooth transition or successor plan in place. However, it is not uncommon for owners in small healthcare entities to create organization structures with themselves at the center (i.e., all key decisions made by one employee-owner). These organizational structures can make it difficult for new management to replace these key people.

(continues)

Exhibit 19.3 *continued*



Although difficult to quantify, it is important to consider the risks associated with bringing in replacement physicians/executives who may be unfamiliar with the entity's business practices. If the business is complex or in a precarious competitive or financial position, this risk may be deepened.

VALUATION ISSUES FOR SPECIFIC HEALTHCARE INDUSTRY NICHES

The next section provides insight into the unique issues associated with the valuation of healthcare services organizations that operate in specific niches of the industry. Healthcare organizations in specific market niches are subject to the pressures and trends of the healthcare industry as a whole. However, each niche presents unique economic and operations issues of its own that impact the valuation of those organizations. This section identifies the key issues to consider when valuing entities in the following industry niches:

- Hospitals and health systems
- Physician and physician group practices
- Ambulatory surgery centers
- Diagnostic imaging centers
- Dialysis centers

ValTip

The regulatory and legal issues discussed earlier in this chapter may pertain to the valuation of entities in many industry niches.

Hospitals and Health Systems

Background

Hospitals and health systems make up a very large segment of the healthcare industry. Not-for-profit hospitals make up 87 percent of the 5,890 hospitals in the United States. Only 747 investor-owned hospitals are operated in the United States. Hospitals and health systems are one of the largest employers in most cities and urban areas. Although the hospital market has gone through a rapid consolidation process over the last 10 years, it still remains considerably fragmented.

Merger and acquisitions activity in the hospital market is reasonably high and is driven by the smaller proprietary hospital systems, such as Province Healthcare Company, Triad Hospitals, Community Health Systems, Health Management Associates, Inc., and Lifepoint Hospitals. The larger chains, such as HCA, Inc. and Tenet Healthcare Corporation, have been selectively acquiring hospitals or hospital interests; however, most of their investment has been in existing hospital expansion projects. Several private hospital chains are developing the size and earnings base necessary to file initial public offerings; these chains include Essent Healthcare, Vanguard Healthcare Corporation, and Ardent Healthcare. In addition, many acquisitions are being made by the stronger of hospitals in a two-hospital or three-hospital town.

Regulatory Issues

Federal antikickback statutes, Stark II regulations, and IRS private inurement are all potentially relevant in a hospital valuation. The antikickback statutes will be important in transactions that involve physician ownership. The Stark II regulations define the exceptions that allow physicians to own interests in hospitals and health systems, called the whole-hospital exception of Stark II. The IRS regulations are important to the extent that the buyer or seller of a hospital is a tax-exempt organization.

Typical Purpose of Valuation

Valuations typically are performed prior to hospital sale or purchase, hospital partnership interest sale or purchase, and financing associated with a hospital transaction. In addition, in some situations the value of a hospital is contested and litigated among shareholders.

Investment value is usually not the required standard of value except certain situations where two proprietary hospital companies negotiate the sale/purchase of a facility.

Valuation Methodologies

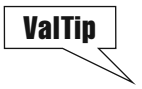
In most situations, the *income approach,* more specifically the discounted cash flow method, is used. This method captures the facts, circumstances, risks, and ultimately the cash flow of the hospital in an ever-changing environment.

The *market approach* has several deficiencies that make it difficult to apply to hospitals:

- Individual hospitals are typically not purchased/sold at the same values as publicly traded health systems.
- Transactions are difficult to use because of the lack of detailed information regarding the hospital purchased as well as the terms of the transaction.

- Popular price-per-bed multiples often do not reflect the economics of a hospital, resulting in unreasonable values.

The guideline company transactions method can be used as long as the appropriate data regarding the transaction and the sellers' financial statements and operations have been provided. Care should be taken to analyze each transaction.



A common oversimplification is utilizing limited market transaction data without understanding the transactions, a situation that can lead to faulty conclusions. They can be used as a reasonableness test.

The *asset approach* to value may be considered in situations where the income approach to value produces a valuation that is similar to or less than the underlying value of the net tangible assets of a hospital. However, because hospitals are single-use facilities, impairment of the asset base should be considered if the asset value exceeds the income approach value.

Specific Issues to Address

- Analyze the top 20 admitters and top 20 surgeons on staff of the hospital, including any risks associated with key physicians.
- Understand where medical patient admissions and surgical patient admissions originate.
- Understand the services provided by the facility on an inpatient and outpatient basis.
- Understand the facility's case and payer mix.
- Analyze the staff and supplies expenses and benchmark the subject hospital to peer groups to understand the efficiency of the hospital. Common benchmarks are full-time equivalent (FTE) per adjusted occupied bed and supply cost per adjusted patient day.
- Review annual capital expenditures for replacement of the depreciating capital base, and review any potential one-time capital expenditures for new programs or new facilities.

Physician and Physician Group Practices

Background

The M&A market associated with physician practices has declined dramatically from the activity levels associated with the early to mid-1990s. Hospitals are no longer purchasing large numbers of physician practices as part of their strategic growth, and the PPM market segment proved to be a strategic failure.

Regulatory Issues

Antikickback statues, Stark II, and IRS private inurement are involved.

Typical Purpose of the Valuation

Valuations typically are performed prior to new partners buy-in, sale of practice by retiring physician, shareholder disputes, divorce, merger, sale to a strategic buyer, and sale to a hospital.

Valuation Methodologies

In the application of the *income approach,* the most important consideration is physician compensation. It is common for physicians to retain 100 percent of the earnings as compensation. Since this leaves no earnings in the practice to value, the income approach can result in zero value. Many valuation analysts use published data to overlay comparable median or average physician compensation. This assumption may be arbitrary since an individual physician generating a certain compensation stream may not take a pay cut and continue to produce the same amount of revenue. The PPM industry overwhelmingly demonstrated that physician pay cuts create an unsustainable relationship (even when the physician was paid consideration for taking the pay cut).

Without making an assumption concerning a lower level of physician compensation, the income approach may not produce value. An exception to this occurs when the practice uses physician extenders such as physician assistants or nurse practitioners. There also can be value in a growing practice that employs younger physicians at lower compensation levels.

In the *market approach*, the availability of accurate market transaction data is very limited. Several sources of information are published: the *Goodwill Registry, PPMC* (published by the Sherlock Company), and transactions reported by publicly traded companies. The difficulty with all these sources is twofold: accuracy and completeness of terms. As discussed previously, to understand the economics of the transaction one must understand the terms of the transaction. For example, the same physician practice could have significantly different valuations if two different physician compensation models were assumed on a posttransaction basis. The Physician Practice Management Companies created an economic model that proved to be unsustainable. As a result, the transaction market for physician practices has changed dramatically. Physicians no longer have the opportunity to sell their practices to third-party management companies. The market that remains is composed primarily of junior employed physicians buying into an existing physician practice. Valuation analysts must fully understand historical transaction data before using it to develop a transaction method to value.

The *asset approach* is used to determine the aggregate value of all tangible and intangible assets including practice and professional goodwill. This determination is often unnecessary, as this value is captured in the income approach. The tangible assets sometimes are valued when there are nominal earnings in the practice and the practice is worth only its net fixed asset value.

Specific Issues to Address

The valuation of a physician practice is significantly different from that performed for any other healthcare entity. Since a single or group physician practice is a professional practice, most of the entity value is based on underlying intangible assets commonly referred to as professional goodwill and practice goodwill. The separa-

tion of professional goodwill from practice goodwill is arguably the most difficult analysis that analysts are required to do in healthcare valuation. How much of the intangible value of the practice walks out of the office everyday in the form of a single physician?

Separating "professional compensation" from "practice earnings" may be one way to quantify an answer to this question. However, this may be challenging to accomplish, depending on the facts of the valuation.

Under yet another scenario, certain physician practices do not generate profits based on the professional goodwill of the physicians but, rather, based on contractual relationships with hospitals. Hospital-based physicians in specialties such as emergency room care, anesthesiology, radiology, and pathology may have exclusive contracts to provide their services to a hospital. As a result, the intangible value—professional goodwill—of these physicians is partially converted into a corporate-owned intangible asset (i.e., a contract). See Chapter 18 for more details on the valuation of professional practices.

Ambulatory Surgery Centers

Background

The development of outpatient or ambulatory surgery centers has been one of the most active areas in the healthcare services industry over the last two to three years. The trend has been driven by two factors:

1. The desire of surgical or procedural specialists to own an interest in the outpatient surgery centers where they work and to be more involved in management of those centers.
2. The movement of outpatient surgical cases into lower cost-of-care settings out of higher cost acute care hospitals.

Currently there are two pure-play public surgery center companies, AmSurg and United Surgical Partners International, Inc. However, because of attractive public multiples and the natural movement to outpatient surgery, many venture capital-backed ambulatory surgery center companies have started recently. There are at least 20 private surgery center management companies, some of which probably will be taken public or acquired by the public companies over the next several years.

Regulatory Issues

These issues include antikickback statutes, IRS private inurement, and Stark II regulations.

The regulatory environment is crucial to determining who is allowed to own an interest in a surgery center and under what terms. On November 19, 1999, the Office of the Inspector General published the "Clarification of the Initial OIG Safe Harbor Provisions Under the Anti Kickback Statute." These regulations created eight new safe harbor provisions which protect arrangements from prosecution under the antikickback statute, which prohibits anyone from knowingly and willfully offering, paying, soliciting, or receiving payment or remuneration to induce volumes reimbursable under the federal or state health care programs. Within the new safe harbors, the federal government created an ambulatory surgery center safe

harbor. The basic theme of this safe harbor is the extension of the practice theory. The safe harbor allows those physicians for whom outpatient surgery or outpatient procedures represent a significant percentage of their practice and practice income to own interests in outpatient surgery centers. The federal government views the surgery center as an extension of those physicians' practices. As a result, they do not receive remuneration for making a referral but rather make additional returns on procedures that are a normal part of their everyday practice.

Typical Purpose of Valuation

- Sale of practice
- Minority interest of a partnership
- Disputes

Valuation Methodologies

The discounted cash flow method of the *income approach* often is used and should consider, by specialty, patient volume, reimbursement changes, and physician practice pattern changes. In addition, the underlying cost structure of the surgery center should be considered, as should routine capital expenditures since ambulatory surgery centers must constantly replace and/or purchase new surgical equipment.

The guideline public company method of the *market approach* usually is not appropriate since usually there are no public companies whose multiples can be applied to the typical ambulatory surgery center. If the guideline company transaction method of the market approach is used, detailed data concerning private transactions should be considered carefully. These data include:

- Purchase price
- Considerations paid (cash or stock)
- Percentage interest of ambulatory surgery center
- Assets and liabilities purchased
- Assets and liabilities excluded
- Specialty case mix
- Payer mix
- Volume growth or contraction
- Utilizing surgeon analysis
- Unique capital expenditure requirements in facility
- Terms of any underlying covenants not to compete
- Terms of shareholder agreements or partnership documents
- Certificate of need in place
- Competition in the subject service area

Each transaction is unique. If the detailed components of a reported transaction are not fully understood, the results are less reliable.

An *asset approach* should be considered to the extent that the subject surgery center does not generate sufficient profitability.

Specific Issues to Address

In most cases the structure of the ambulatory surgery center is a partnership (limited liability partnership, S corporation, limited liability corporation, limited partnership). Ownership includes physicians, physicians and hospitals, and physicians and ambulatory surgery center management companies.

Ambulatory surgery center regulatory safe harbors dictate who the shareholders of the surgery center can be. The only physicians who are allowed to own an interest in a surgery center are surgeons and proceduralists (gastrointestinal doctors and anesthesiologists). The physician owner of a surgery center is by definition a shareholder and a customer. The surgery center will operate in the manner that the customer or physician shareholder desires, or the customer will find another location to perform cases. This is an important issue when analyzing minority and lack of marketability discounts. In general, operating agreements in surgery center partnerships are designed to minimize the issues associated with discounts.

Addendum 1 to this chapter presents a case study for the valuation of an ambulatory surgery center.

Diagnostic Imaging Centers

Background

The outpatient diagnostic imaging center is a business that is named in the Stark II regulations as a designated health service. As a result, ownership is limited to physicians. The in-office ancillary services exception to the Stark II act exempts services personally provided by a physician member of the same group practice as the referring physician or personally by individuals who are directly supervised by the referring physician or another physician in the same office. As a result of this exception, the only way a referring physician may own an interest in an imaging center would be to operate the business within the group practice exception of Stark. By definition, this would not be a freestanding outpatient imaging center but rather a component of a group practice.

Radiologists are not considered referring physicians (much like surgeons in a surgery center), since the federal government views a diagnostic imaging center as an extension of the practice of radiology. Therefore, radiologists are not prohibited from owning an interest in a freestanding outpatient imaging center. The typical imaging center valuation consists of a partnership between radiologists and a hospital or health system. Radiologists perform procedures in hospitals, so the same regulatory requirements exist for radiology joint ventures.

Regulatory Issues

The issues involved are antikickback statutes, Stark II, and IRS private inurement.

Typical Purpose of the Valuation

- Sales of Center
- Minority interest in joint venture
- Disputes

Valuation Methodologies

The discounted cash flow method of the *income approach* typically is used as it captures estimates of future volume, reimbursement, revenue, expenses, and capital cost assumptions.

The guideline transaction method of the *market approach* often is not reliable because the following information is usually not available:

- Assets and liabilities purchased (excluded assets such as working capital not reported)
- Consideration (cash versus stock in the buyers company)
- Modality and volume mix of the imaging center (MRI, CT, ultrasound, fluoroscopy, mammography, X-ray, bone density, nuclear, etc.) as some modalities are far more profitable than others
- Volume growth
- Competition in service area
- Payer mix
- Global fee revenue versus technical fee only
- Radiology relationship and/or contract
- Maintenance agreement
- Equipment manufacturer, age, and condition
- Available capacity in the center
- Need for large capital reinvestment

The *asset approach* can be applied if the valuation of the business on an income approach is similar to or less than the estimated net asset value. Engagement of specialized equipment appraisers is probably necessary given the unique type and use of the assets.

Specific Issues to Address

Capital expenditures as a percent of operating earnings for diagnostic imaging centers is higher than in other healthcare businesses. Equipment in a diagnostic imaging facility is very expensive: MRI machines can cost $1.6 to $2.0 million, and CT machines can cost as much as $1.2 million. In addition, the technological obsolescence in imaging technology is very rapid, resulting in more frequent equipment purchases. There has also been a continual downward pressure on reimbursement of diagnostic imaging procedures over the last 10 years, with that trend expecting to continue. These major economic influences result in valuation multiples that are often lower than those in other healthcare businesses.

Dialysis Centers

Background

Patients who suffer from end-stage renal disease (ESRD) are required to have dialysis treatments approximately 12 to 13 times per month. Regardless of age, patient ESRD is the only program that is reimbursed by the Medicare program. Patients who are diagnosed with ESRD qualify for the Medicare program 24 months after

having been diagnosed. As a result, Medicare is always a very large payer for dialysis services.

Medicare's heavy participation in the dialysis business creates the risk that HCFA will change reimbursement levels for a significant percentage of the business. With the government as a major payer, the regulatory requirements in the business are significant.

Purpose of the Valuation

- Sales and buy-ins
- Disputes
- Regulatory issues
- Antikickback statutes, Stark II, IRS private inurement

Valuation Methodologies

The DCF method of the *income approach* typically is used, as it captures estimates of future volume, reimbursement, revenue, expenses, and capital cost assumptions.

The guideline transactions method of the *market approach* can be utilized in the valuation of dialysis facilities, unlike most other healthcare entities. The uniformity of utilization (volume by patient) and payer mix (Medicare) allows careful use of transaction data. Price per patient can be used very carefully as a check on the results established in the income approach. The quality and depth of information is also important. Availability of total purchase price, consideration paid, assets and liabilities included, number of patients, and payer mix are desirable to rely on this approach. In some cases that data can be found in the Irvin Levin Healthcare M&A database and public company SEC reports.

Typically the *asset approach* to value is not relied on in the valuation of a dialysis facility unless the facility is financially underperforming. Each dialysis machine costs between $20,000 and $30,000, so for a 30-station facility, the machines could cost almost $1 million. In addition, special water purification systems used in the dialysis process must be installed in each facility. The underlying cost of the facility, including equipment, tenant improvements, working capital, and other intangible assets, should be considered during the valuation process. To the extent that the valuation under an income and market approach falls below that of the asset approach, the underlying net assets should be considered as an appropriate indication of value.

Specific Issues to Address

The volume of patient treatments is very predictable based on the number of patients treated at the dialysis center. However, the risk associated with competition from the patients' primary physician (the nephrologist) is very high. Nephrologists who are responsible for the patients in a dialysis center can direct patients from center to center. As a result, nephrologists typically are subject to medical directorship agreements that include strong covenants not to compete. The lack of covenants not to compete with the nephrologists treating patients in a dialysis center would increase the risk of the cash flow stream dramatically. The medical directorship payment should also be evaluated.

ValTip

Understanding the dialysis center's relationship with the nephrologist is critical in assessing risk.

PUBLICLY TRADED HEALTHCARE SERVICES COMPANIES BY NICHE

The following healthcare entities are some of the best known within their niche. Public information about these companies and information disclosed in their public filings can assist the analyst in understanding the dynamics influencing the economic performance of the particular niche.

Hospitals

Clarent Health Corporation (formerly Paracelcus Healthcare Corporation)
Community Health Systems, Inc.
HCA The Healthcare Corporation
Health Management Associates, Inc.
Iasis Healthcare Corporation (public debt)
Lifepoint Hospitals, Inc.
Province Healthcare
Select Medical Corporation
Tenet Healthcare Corporation
Triad Hospitals, Inc.
Universal Health Services Corporation

Surgery Center Companies

Amsurg Corp
HealthSouth Corporation
SSI Surgical Services, Inc
United Surgical Partners International, Inc.

Dialysis Providers

DaVita, Inc.
Dialysis Corporation of America
Fresenius Medical Care
Gambro AB
RenalCare Group, Inc.

Physician Organizations

Novamed Eye Care, Inc.
Pediatrix Medical Group
Phycor

ProMedco (delisted)
US Oncology

Diagnostic Imaging

Insight Health Services Corporation
Medical Alliance
Primedix Health Systems, Inc.
Raytel Medical Corporation
US Diagnostics, Inc.

Pharmacy Benefit Management

Caremark RX

Postacute Care

Advocat
Alterra Healthcare Corporation
ARV Assisted Living, Inc.
Assisted Living Concepts
Balanced Care Corporation
Beverly
Capital Senior Living Corp
Diversified Senior Services, Inc.
Emeritus Corporation
Extendicare Inc
Genesis Health Ventures Group
Greenbriar Corporation
Integrated Health Services, Inc
Integrated Health Systems
InterWest Medical Corporation
Kindred Healthcare, Inc.
Mariner Post Acute Care Network
National Healthcare Corporation
Regent Assisted Living Inc.
Sunrise Assisted Living Facilities

Behavioral Health Companies

Integra, Inc.
Horizon Health Corporation
Magellan Health Services
NextHealth, Inc.
PMR Corporation
Ramsay Youth Services, Inc.
Res-Care, Inc.

Dental Services

Castle Dental Centers

InterDent, Inc.
National Dentex Corporation Orthodontic Centers of America

Disease Management

American Healthways, Inc.

Specialty Hospital Companies

American Kidney Stone Management
Lithotripsy Providers
MedCath
Medstone
Prime Medical Services, Inc.

Home Health Care

Almost Family
Amedisys
American Home Patient
American Homepatient, Inc.
Apria Healthcare Group
Contincare Corporation
Coram Healthcare Corporation
Lincare Holdings, Inc
National Home Health Corporation
New York Health Care
Option Care, Inc.
Transworld Healthcare Inc.

Lab Companies

American Medical Laboratories Ameripath, Inc.
Dianon Systems, Inc.
IMPATH, Inc.LabOne, Inc.
Laboratory Corporation of America
Quest
Specialty Laboratories, Inc,
Urocor, Inc.

ADDENDUM 1—TARA SURGERY CENTER, L.P.

The Engagement

Background

It is early 2001. Tara Surgery Center (Tara or center), L.P., is a freestanding, multispecialty surgery center located in a metropolitan area in the southern part of the United States. The center has three operating rooms and two procedure rooms and accommodates the following specialties: ear, nose and throat; general surgery; gastrointestinal; gynecology; neurology; orthopedic; pain management; plastic; podiatry; urology; and vascular surgery. Over the past three years, Tara Surgery Center has increased its total volume from 2,038 cases in 1998 to 6,038 total cases in 2000. As a result, the partnership has almost tripled its EBITDA from approximately $500,000 to $1.4 million.

The center is not reliant on a hospital network or affiliation for its case volumes. It is heavily reliant on the individual surgeons currently performing the cases at the center. Hence external forces, such as the development of a new center, can cannibalize these cases when surgeons perform their cases elsewhere.

A new competing surgery center Rhett Surgery Center (Rhett) is in the final phase of construction approximately two blocks away. Rhett will have four operating rooms, two treatment rooms, and will immediately become a serious competitor. Some of the physicians currently utilizing Tara own an interest in Rhett. Rhett has attracted some of the Tara Surgery Center's younger, nonshareholder surgeons to perform their cases at the new facility upon completion. In addition, two of the Tara's surgeons have informed the center's administrator, Joe Scarlett, of their intentions to retire next year. Scarlett has engaged Mission Critical Valuation (MCVal) to provide a fair market value opinion of a 1 percent limited partnership interest in the center so that the partnership can transact limited partnership interests in the surgery center for the purpose of purchasing the two retiring surgeon's interests and offering units to other younger incoming surgeons.

Note: **Some of the numbers do not foot or tie due to rounding.**

Exhibit 19.4 Case Facts

Name of Center:	Tara Surgery Center, L.P.
Purpose of Valuation:	Tara is planning on a sale of 1 percent limited partnership units to young surgeon investors and buying out the interests of two retiring surgeons.
Standard of Value:	Fair market value
Valuation Date:	12/31/2000

Information Request

As with most valuation consulting engagements, time is of the essence. To expedite the information-gathering process, MCVal used a preliminary information request form that included the following:

- Descriptions of all of the competing surgery centers, including exact location, number of operating rooms, estimated number of cases performed, reputation in the community, hospital affiliations, etc.

- Annual financial statements (income statements and balance sheets) for the last three fiscal years, 1998 through 2000
- Interim financial statements, year-to-date 2001 and the same period 2000
- A summary of Tara's history, including dates of formation, growth record, and addition of specialties
- Operational reports, by specialty and physician, for the three years prior to the valuation date and the most recent year-to-date period, including:
  - Cases performed by specialty (and physician if available)
  - Charges and net revenues by specialty
  - Top 10 cases by specialty
  - Top 10 payers by charges
  - Copies of actual bills associated with the top 10 cases along with their respective explanation of benefits (EOBs) for each of the last four months and a sampling of five bills per month over the last 12 months
- Information regarding the current and projected status of physician-surgeons using the facility
- Managed care contracts and an overall discussion of payer mix by volume (Medicare, Medicaid, private insurance and managed care)
- Information regarding the average insurance reimbursement as a percentage of Medicare
- A list and description of the outstanding accounts receivable as of the valuation date, including an aged accounts receivable report
- A list and description of prior stock transactions and details of any offers to buy assets or interests in the center
- A list of employees:
  - Name
  - Compensation
  - Average hours worked per week
  - Benefits
  - Responsibility/position description
  - Tenure
- Detailed information concerning facility leases including:
  - Square footage
  - Rental rates
  - Terms of lease
- A detailed list of fixed assets including:
  - Original acquisition cost
  - Date of acquisition
  - Depreciation (if available)
- A summary of any outstanding contingencies or liabilities not described in the financial statements
- A copy of the partnership agreement and/or operating agreement
- List of the current shareholders and number of shares owned
- A copy of the center's relevant accreditation and licensing information (or summary)
- A copy of any market research or demographic data for the center's service area
- A copy of documents related to any future expansion plans, expected capital expenditures, anticipated staffing changes, or other significant change in the operations of the center

Information Receipt

Upon receipt of the requested information, often it is found that information is missing or incomplete. Consider this example of incomplete or unusable data. (Note: It is only one of many possible examples). The gross charges, adjustments, and net charges for Tara Surgery Center (see Exhibit 19.5) are not broken out by specialty but are grouped together for the center.

Exhibit 19.5 Tara Surgery Center Net Charges

	1998	1999	2000
Gross Charges	$5,461,021	$6,714,955	$7,031,506
Adjustments	($3,429,500)	($2,788,081)	($2,895,326)
Net Charges	$2,031,521	$3,926,874	$4,136,180

Since the information is needed by specialty to accurately project the net revenues per case for each respective specialty, MCVal contacted Joe Scarlett and requested the additional breakdown of data, as shown in Exhibit 19.6.

Exhibit 19.6 Tara Surgery Center: FYE 2000

Specialty	Gross Charges	Adjustments	Net Receipt
GI	2,059,354	864,227	1,195,127
ENT	1,669,127	714,745	954,382
Genera	481,836	195,463	286,373
GY	2,330	966	1,364
Neurology	135,977	62,348	73,629
Orthopedic	299,047	118,282	180,765
Pain Management	864,540	337,539	527,001
Plastic	244,342	115,820	128,522
Podiatry	175,427	84,631	90,796
Urology	960,976	340,599	620,377
Vascular	138,550	60,706	77,844
Total	7,031,506	2,895,326	4,136,180

All of the other articles of information were received as requested. MCVal reviewed the partnership agreement (Exhibit 19.7) next to get a more complete understanding of Tara's operations.

Choice of Valuation Approach

On first glance at the center's profit and loss statement, it appears that the income approach was the preferred valuation method. However, MCVal considered the benefits and determinants of each of the three approaches to value before making a final selection.

Exhibit 19.7 Tara Surgery Center Partnership Agreement Clauses

Term: The term of the partnership agreement is effective from September 24, 19XX, to September 24, 20XX, unless extended or sooner liquidated in accordance with the Agreement.

Name of Partnership: Tara Surgery Center, L.P., a limited partnership.

Status of General Partner: The General Partner, a Hospital Corporation, has the exclusive authority to manage the operations of the business of the Partnership under state law. The Partnership has entered into a Management Agreement with Joe Scarlett in which Joe manages the day-to-day operations of the Center for 5.0% of gross operating revenues less allowances.

Status of Limited Partners: No limited partner is granted the right to participate in the management or control of the Partnership's business. These powers and/or rights are reserved for the General Partner. Consequently, no Limited Partner will have any personal liability, to the Partnership, another Partner or to the creditors of the Partnership.

Distributions: Except otherwise noted, available cash is distributed on a quarterly basis to the Partners according to the percentage ownership of each Partner. Available cash is defined as the excess cash, or profit, remaining after all overhead costs have been paid.

Buy/Sell Agreements: Except as otherwise provided in the agreement, no limited partner has the right to sell or transfer units without the consent of the General Partner. Before any such unit is sold or transferred, the General Partner has the first right of refusal to acquire the interest. Any limited partner may sell his/her units to the General Partner at a price and terms agreed-upon by both parties. The purchase price for these units shall be payable in cash to seller, or to the holder of a promissory note if one is available.

Agreed-Upon Value of Partnership Interests: The agreed upon value of an interest in the Partnership will be determined based on a formulaic approach equaling trailing 12 months EBITDA multiplied by 4.0 less interest-bearing debt. If the General Partner determines that a third-party valuation is required for regulatory purposes because of dramatic changes in the financial performance of the business, they may elect to engage a third-party valuation firm.

Reminder

The asset approach considers the cost of replicating a comparable asset, security, or service with the same level of utility. In a general sense, the asset approach is considered when the value derived exceeds the value generated from the income or market approach. To the extent that the asset approach value does not exceed either of the other two approaches, it is not heavily relied upon.

The market approach estimates value by comparing the value of similar assets, securities, or services (hereinafter collectively referred to as the guidelines) traded or transacted in a free and open market. The value of the subject can be estimated by adjusting the market value of the guidelines for qualitative and quantitative differences.

The income approach estimates value by analyzing the historical financial information and estimating the future level of cash flows to be generated by the subject company. Once an appropriate rate of return is estimated for the subject company, its benefit stream is discounted or capitalized back to present value, which represents value to an investor in the subject.

Ambulatory Surgery Center Industry

An ambulatory surgery center (ASC) is usually established as a freestanding independent surgery center or as a hospital-owned facility where outpatient surgery is performed. ASCs are also referred to as freestanding outpatient surgery centers (FOSCs) or surgicenters.

Several factors differentiate ASCs from other businesses in the healthcare field. ASCs provide the physician and patient a location outside the hospital setting for surgical procedures to be performed at a considerable discount. As a result, Medicare, Medicaid, and private insurers now allow over 2,200 procedures to be performed in an ASC setting.

The fact that healthcare costs have increased at rates in excess of inflation is considered the primary factor in the development and increased utilization of surgery centers. Procedures performed on an outpatient basis generally cost between 30 percent and 60 percent less than the same procedures in a hospital setting. A study done by Blue Cross/Blue Shield of (certain state) demonstrated that a 47 percent drop in surgery costs is attributable to ASCs.

While cost containment was the initial driver in the growth of ASCs, current growth in the industry also is driven by advantages to both patients and physicians. In a survey completed by the U.S. Department of Health and Human Services Office of the Inspector General (OIG), those Medicare beneficiaries who underwent procedures in ASCs strongly preferred ASCs over hospitals. Reasons cited include less paperwork, lower cost, more convenient location, better parking, less waiting time, better organization, and friendlier staff. The study also determined that the ASC provides an environment that is as safe as a hospital and that postoperative care is also comparable to a hospital. In addition to increased patient satisfaction, physicians prefer performing surgeries in an ASC because they are able to achieve larger volumes and greater economies of scale. Typically, ASCs provide faster operating room turnover time, and cases do not get transferred to emergency rooms as often as they do in acute care hospitals.

Technological advances also have contributed to substantial growth in the ASC segment. Advances such as laser, endoscopy, and arthroscopic procedures have allowed for less invasive procedures that fit well in an ASC setting. Medicare payment rates for freestanding ASC procedures are expected to undergo significant changes. These changes are expected to be implemented in 2002. Based on the 20 highest-volume ASC procedures (based on national averages), these payment rates include increases as well as decreases and impact all surgery specialties. The impact of these price changes will be reflected in the surgery case mixes selected by surgery centers. Due to the timing and impact of uncertain fee schedules of the proposed new payment methodology, MCVal decided not to adjust reimbursement for the new rules.

Site Visit

By now, MCVal had gained a solid understanding of the nature of the business, the industry, and the center's financial and operating history. A site visit came next. Fifteen of the key issues MCVal was seeking to better understand were:

1. The facility's hours of operations to analyze scheduling issues and capacity levels
2. Major competitors

3. Reasons why case volumes/revenues by specialty increased so dramatically over the past two years
4. Historical and future physician practice volume patterns
5. Anticipated changes in the center's overall payer mix (i.e., managed care contract changes, etc.)
6. New employee hires in the past year
7. Anticipated staffing level changes over the next year
8. Details regarding:
   a. Equipment lease costs
   b. Contract services costs
   c. Other operating expenses
9. Recent purchases of partnership interests by new surgeons
10. Types of services provided through the management fee
11. Copy of the management agreement
12. Estimated capital expenditures in the near future
13. Types of equipment, quantities, manufacturers' names, manufacturers' ID numbers, and the dates of purchase
14. Whether to engage a machinery and equipment appraiser
15. Overall condition of the building and status of the current equipment

Interviews are conducted with the top surgeons to understand their utilization intentions in the future and to uncover key pieces of information (e.g., retirement) that might have gone undetected during document review. After the visit, the information is synthesized and used in the valuation model(s). In all likelihood, some other issues may have surfaced during the site visit that may need extra clarification. It is not uncommon for the analyst to phone the administrator to ask additional questions after the site visit has taken place.

Performing the Valuation

Income Approach—Preparatory Analyses

At this point, MCVal had determined that the discounted cash flow (DCF) method of the Income Approach was the appropriate method to use to value Tara Surgery Center. MCVal performed the following important analyses as preparation for applying the DCF to Tara.

- *Analysis of Specialty (Volume) Mix*. What specialties make up Tara's case mix? Has the total specialty mix noticeably changed over the past several years? Are the cases, on a percentage basis, consistent with the historical case figures? Does the ASC perform pain case procedures? How many cases per day are performed per operating room? (See Exhibit 19.8.)

  The total case volume for Tara has increased 49.6 percent (compounded annually) from 2,695 cases in 1998 to 6,034 cases in 2000. Gastrointestinal (GI) and pain cases account for 3,734 (or 61.9 percent) of the total 2000 case volumes. GI and pain cases are procedurally oriented and do not require an operating room. These procedures are performed in a procedure room.

Exhibit 19.8 Tara Surgery Center, Case Volume, Mix, and Percent

	1998	1999	2000	1998	1999	2000
GI	1,255	2,274	2,571	46.6%	45.9%	42.6%
ENT	365	716	750	13.5%	14.4%	12.4%
General	86	265	359	3.2%	5.3%	5.9%
GYN	—	1	2	0.0%	0.0%	0.0%
Neurology	47	67	90	1.7%	1.4%	1.5%
Orthopedic	52	143	158	1.9%	2.9%	2.6%
Pain Management	322	451	1,163	11.9%	9.1%	19.3%
Plastic	130	249	237	4.8%	5.0%	3.9%
Podiatry	14	103	75	0.5%	2.1%	1.2%
Urology	369	495	498	13.7%	10.0%	8.3%
Vascular	55	192	131	2.0%	3.9%	2.2%
Totals	2,695	4,956	6,034	100.0%	100.0%	100.0%

ValTip

It is important to understand the underlying components in the case mix, since the reimbursement rates for each specialty are not homogenous.

Based on 250 work days per year, the center performs 24.1 cases per day, or 8.1 cases per day per room. The average surgery case (excluding pain and GI cases) takes approximately 45 minutes to one hour to perform. As a result, a surgery center open nine hours per day (8 a.m.–5 p.m.) can perform, on average, eight to 10 cases per day per operating room. Based on a nine-hour day, it would appear as if Tara had excess capacity.

- *Analysis of Caseloads of Top 10 Surgeons.* It is not uncommon for the top 10 surgeons in an ambulatory surgery center to account for a large percentage of the center's caseload. The top 10 Tara surgeons account for 73 percent of the total FYE 2000 caseload (see Exhibit 19.9).

ValTip

The analysis must ascertain the likelihood that the top 10 surgeons will continue to perform cases at a center, which affects the specialty growth rates used in the projections.

This analysis provides insight into the productivity of the top 10 physicians at Tara. As Exhibit 19.9 indicates, Roberts and Wilson have shown declining case

Exhibit 19.9 Top Ten Physicians—2000

Name	Specialty	2000	%	Year 1 Growth	Cases Year 1	Comments
Capor	GI	1,239	21%	2%	1,264	Reaching capacity; moderate growth projected
Harpert	GI	731	12%	3%	753	Moderate growth in the future
Peters	Pain	468	8%	3%	482	Moderate growth in the future
Roberts	Urologist	524	9%	-100%	0	Retiring
Shazo	ENT	360	6%	3%	371	Moderate growth in the future
Fossey	ENT	50	1%	15%	58	Started performing cases in December 2000
Wilson	GI	247	4%	-100%	0	Retiring
Keter	ENT	115	2%	10%	127	Started performing cases in August 2000
Bryan	General	283	5%	3%	291	Moderate growth in the future
Dallas	Pain	375	6%	-50%	188	Performing cases at new surgery center
Top Ten		4,392	73%	-25%	3,533	
Total Cases		6,034	100%	-21%	6,062	

volumes over the past two years and have indicated their interest in retiring in 2001. As a result, Joe Scarlett has begun to consider ways to replace their lost case volumes. In the interview, Scarlett indicated that Tara did not have the capability to replace the lost urology case volumes immediately. Therefore, MCVal decreased total urology case volumes 50 percent for year 1 of the projection period. In addition, physicians who will invest in Rhett Surgery Center will also negatively affect case volumes.

- *Payer Mix Analysis.* What percentage of the center's business is associated with Medicare? Medicaid? Managed care? Self-pay? Other? Answers to such questions provided the data by which MCVal estimated future net revenue per case. (See Exhibit 19.10.)

Exhibit 19.10 Tara Surgery Center Payer Mix Analysis—Expressed as a Percentage of Net Revenue

	1998	1999	2000
Medicare	47.0%	48.0%	49.0%
Commerci	18.0%	20.0%	8.0%
Blue	10.0%	11.0%	13.0%
HMO	9.0%	10.0%	14.0%
Medicaid	6.0%	5.0%	3.0%
PPO	3.0%	3.0%	11.0%
Worker's	2.0%	2.0%	1.0%
Champus	1.0%	1.0%	1.0%
Other	4.0%	0.0%	0.0%
Total	100	100	100

ValTip

Analysts can obtain a sampling of the surgery center's explanation of benefits (EOBs) from the most recent surgical cases to understand the dynamics of the payer mix. An adequate sampling of 25 to 30 EOBs with the associated gross and net charges for that procedure will provide an understanding of the main procedures performed under each specialty as well as help assess the reasonableness of the facility's overall charge rates.

Medicare accounts for approximately half (49 percent) of the center's payer mix. For this reason, Medicare reimbursement rates may be a good starting point for a reasonableness check of the net Tara revenue per case amounts.

Exhibit 19.11 provides an example of the detailed information extracted from 3 EOBs of Tara Surgery Center.

Exhibit 19.11 Procedure Codes and Charges

Procedure Code	Specialty	Gross Charge	Adjustment	Net Charge
66984	Oph	$1,828.00	$1,100.00	$728.00
66984	Oph	$1,795.00	$1,125.00	$670.00
69400	ENT	$2,150.00	$1,250.00	$900.00

MCVal did a payer mix analysis and a charge and collection analysis to identify any risk associated with anticipated changes in reimbursement. Since the ambulatory pricing classifications (APCs) for freestanding outpatient surgery centers will not be implemented until early 2002 and the APC fee schedules are not currently available, MCVal included a risk factor in its projections for future unknown reimbursement levels by increasing the discount rate

- *Staffing Roster Analysis.* Since employee salaries and wages are the largest controllable expense allocation for any medical practice, MCVal re-created an employee salaries and wages schedule from the staffing roster to benchmark it against reported historical data as of the valuation date. The staffing roster included such things as names, rates of pay, hire/termination dates, and estimated (FTE) status (see Exhibit 19.12).

Exhibit 19.12 Tara Surgery Center Salary and FTE Breakdown

	Est. Annual Salary	Estimated FTEs	Average Salary/FTE
Nursing Staff	$450,152	13.07	$34,442
Tech Staff	$152,822	5.98	$25,550
Administrative Staff	$238,346	8.07	$29,528
Total Staff	$841,320	27.12	$89,520

FTE is the acronym for "full-time equivalent." 1.0 FTE represents a single individual working 40 hours per week (full time).

a. *Nurse FTEs*. There are different classes of Nursing FTEs: PRNs (Latin, meaning "pro re nata," or "as matters are needed"), LPNs (licensed practical nurses), and RNs (registered nurse). Typically, Nurse PRNs act as "floating FTEs" and either work on a part-time or as-needed basis. As a result, PRNs are not each represented by 1.0 FTE. LPNs and RNs typically are hired on a full-time basis and are each represented by 1.0. Generally, total estimated nursing FTEs increase as cases (procedures) increase, although this is not necessarily a linear relationship. FTEs tend to be variable with case volumes.
b. *Technical FTEs*. In today's surgery centers, there is a high demand for the use of sophisticated equipment and the medical and technician staff to operate it. Typically, the ratio of technical FTEs to medical FTEs in any given ASC is approximately 1:3. Generally, total estimated technical FTEs increase as cases (procedures) increase, but this is not necessarily a linear relationship. FTEs tend to be variable with case volumes.
c. *Administrative FTEs*. Administrative FTEs consist of employees such as administrative assistant, billing office manager, receptionist, secretary, and so on. Unlike nursing and technical FTEs, the number of administrative FTEs is not tied directly to case volumes. However, once certain case/physician volume thresholds are met, additional administrative FTEs may need to be added.
d. *Employee Benefits Analysis*. The industry standard benefit package is approximately 8.0 and 13.0 percent for payroll taxes and employee benefits, respectively. However, since each ASC has a different benefit structure, MCVal visited with Joe Scarlett in order to prepare an accurate employee benefit analysis.

- *Medical Supplies Analysis*. Aside from employee salaries and wages, medical supply expenses are probably the most important expense allocation for a per-case rate. The medical supply rate will need to be adjusted to volume changes during the projection period (see Exhibit 19.13).

Exhibit 19.13 Tara Surgery Center Medical Supplies Analysis

Medical Supplies	Restated 1999	Restated 2000	Normalized Base Year	Projections Year 1
Total Cases	4,956	6,034	6,034	6,062
Estimated Supply Cost per Case*	$104.98	$47.84	$47.84	$49.27
Total Medical Supplies	$520,263	$288,652	$288,652	$298,692

*Excludes Associated Drug Costs

The medical supply costs per case (excluding associated drug costs) is approximately $48 in FYE 2000. The decrease in medical supply per-case rate is due to the addition of pain cases. The related medical supplies associated with pain cases can be as much as 50 to 75 percent lower than the typical surgery case. This medical supply case rate is multiplied by the forecasted case volumes to arrive at

estimated medical supply expenses for year 1 of the projection period. The medical supply case rates increased at CPI, or 3.0 percent, from the normalized base year to year 1 to accommodate for inflation.

- *Facility Expense Analysis.* Does the facility own the building or pay a specified rental expense related to a facility lease agreement? If the ASC does pay a rent expense, the analyst can get a copy of the lease agreement from ASC management. By reading the lease agreement, the analyst will understand if expenses such as utilities and janitorial are included in the lease rates. Doing this will prevent the analyst from double counting any of these expenses in the projections.
- *General and Administrative Expense Analysis.* Typically, general and administrative expenses account for the third largest expense allocation in the operating expense profile. General and administrative expenses include items such as advertising, office expenses, legal and professional fees, and the like. The analyst should take note of the expenses included in the G&A operating profile to pinpoint key expense levels. Typically, bad debt expenses are included in G&A costs. High bad debt expenses affect the ASC's ability to collect fees, thus, negatively affecting the ASC's value.
- *Trends Analysis—Income Statement.* After the analyst has understood the dynamics of each operating expense segment, it is important to understand the overall operating expense profile (see Exhibit 19.14).

Exhibit 19.14 Major Operational Expenses and Percent of Revenue (1998–2000)

	1998	1999	2000	1998	1999	2000
Net Revenues	$2,031,321	$3,926,874	$4,136,180	100%	100%	100%
Total Cases	2,695	4,956	6,034	n/a	n/a	n/a
Net Revenue/Case	$753.74	$792.35	$685.48	n/a	n/a	n/a
Major Operating Expenses:						
Employee Salaries & Wages	467,656	901,230	1,056,796	23.0%	23.0%	25.6%
Employee Benefits	144,244	21,620	61,131	7.1%	0.6%	1.5%
Occupancy Costs	66,048	77,779	83,986	3.3%	2.0%	2.0%
Drugs & Medical Supplies	492,040	702,362	514,075	24.2%	17.9%	12.4%
Other Medical Costs	34,799	62,717	67,896	1.7%	1.6%	1.6%
Insurance	16,391	26,295	38,541	0.8%	0.7%	0.9%
General & Administrative	322,738	818,733	883,694	15.9%	20.8%	21.4%
Total	1,543,916	2,610,737	2,706,118	76.0%	66.5%	65.4%
EBITDA	$487,405	$1,316,137	$1,430,062	24.0%	33.5%	34.6%

The total net revenues for the ASC have increased 42.7 percent (compounded annually) from $2.03 million in 1998 to $4.13 million for 2000. The primary determinant of this revenue increase is a 49.6 percent compounded annual increase in total case volumes from 2,695 to 6,034 cases for 1998 and 2000, respectively. Total expenses, as a percentage of net revenues, actually have decreased from 76.0 percent in 1998 to 65.4 percent as of FYE 2000, due primarily to the 49.6 percent compounded annual increase in case volumes from

2,695 cases in 1998 to 6,034 cases by 2000. The 14 percent decline in the net revenue per case figures from 1999 to 2000 is primarily due to the large increase in pain volumes from 451 to 1,163 cases over the same time frame. In addition, through interviews with some of the utilizing surgeons, MCVal has learned that over the past two years, the surgeons have become more cognizant of their own medical supply per case rates and have opted to use more cost-effective supplies and instruments.

- *Trend Analysis—Balance Sheet (see Exhibit 19.15).* Have total assets increased or decreased based on the historical information? total liabilities? total interest-bearing debt? working capital (current assets—current liabilities)? Does the net income as reported on the balance sheet *equal* the net income as reported on the income statement(s)?

  Does the ASC own the physical assets (i.e., building and equipment) or lease these items from a third party?

  The total asset base has stayed the same with $3.97 million and $3.94 million for FYE 1998 and FYE 2000. The total net working capital has decreased from $1.16 million in 1998 to $660 thousand by 2000. Total net fixed assets have decreased slightly from $1.99 million to $1.88 million over the same time frames.

  Total liabilities actually have increased from $1.71 million to $2.09 million over the same time periods. The increase in total liabilities is due primarily to increases in accrued expenses.

Exhibit 19.15 Balance Sheet

	Fiscal Year Ended December 31,		
	1998	1999	2000
Current Assets	$1,986,079	$2,024,409	$2,051,545
Net Fixed Assets	$1,987,930	$2,023,082	$1,884,813
Total Assets	$3,974,009	$4,047,491	$3,936,358
Current Liabilities	$ 826,215	$ 774,261	$1,392,463
Long-term Debt	$ 879,512	$ 793,660	$ 698,760
Total Equity	$2,268,282	$2,479,570	$1,845,135
Liabilities and Shareholder's Equity	$3,974,009	$4,047,491	$3,936,358

Income Approach—Developing the Normalized Base Year

The normalized base year is developed by adjusting the selected income statement to reflect Tara's true operational profile for the projection period. During the site visit, MCVal discussed proposed adjustments with Joe Scarlett to assess their likelihood.

Some of the adjustments made to Tara include:

- *Employee Salaries and Wages:* Historically, the center's accounting system included associated contract labor costs (i.e., PRNs, etc.) with employee salaries and wages. MCVal attempted to reconcile the estimated contract labor costs with

historical contract labor costs based on the employee staffing roster and discussions with management.
- *Employee Benefits.* Based upon conversation with Scarlett regarding future benefits, payroll taxes and employee benefits were adjusted at industry norms of 8.0 percent and 13.0 percent respectively, of employee salaries and wages.
- *Facility Rent.* The center does not currently own the facility. The estimated facility rent costs for Tara are based on the total square footage multiplied by the contracted dollar per square foot cost with a CPI adjustment (3.0 percent per annum) included. The CPI adjustment is added in the projection period and is based on the analyst's understanding of the lease agreement.
- *Interest Expense.* Since MCVal is using the invested capital method of the DCF, the interest expense was eliminated to derive debt-free operations.
- *Income Taxes.* A blended federal and state income tax rate was calculated.

Income Approach: Development of a Discount Rate. The discount rate is often the most contested part of the income approach (Chapter 5). The weighted average cost of capital (WACC) model for estimating the discount rate is a highly regarded method of estimating an appropriate discount rate, although direct equity methods can be used as well. The discount rate needs to incorporate two factors related to the projected cash flow stream:

1. *Financial risk*. The risk inherent in the subject entity's financial structure (i.e., the utilization of debt versus equity financing).
2. *Business risk*. The uncertainty associated with the economy, industry, and inherent risk profile of the subject entity.

Some of the risks associated with Tara Surgery Center include:

- *Top 10 Physicians.* A total of 10 physicians account for almost 75 percent of the center's total case volumes. There are 18 investing surgeon shareholders in the ASC. Drs. Capor and Harpert account for 33 percent of the ASC's caseload. Therefore, a significant amount of the ASC's value (risk) is related to these physicians. Extenuating circumstances (i.e., development of new center that lures physician utilizers away) can affect the ASC's value. Failure to recognize this risk could cause an overvaluation.
- *New competition.* Tara has not been reliant on a hospital network or affiliation for its case volumes. Instead, it is heavily reliant on the individual surgeons currently performing the cases. Hence, external forces, such as the development of a new center, can tempt these surgeons to perform their cases elsewhere. Rhett Surgery Center will be completed within the next calendar year and has already started to prey on Tara's current surgeon base. The discount rate should incorporate some factor for the risk this introduces into the center's projected revenue stream.
- *Uncertainty of APCs.* As mentioned earlier, the APCs for freestanding outpatient surgery centers will not be implemented until early 2002. As a result, an additional risk factor exists since the APC fee schedules are not available and future reimbursement prices are unknown. High volatility or drastic changes in the APCs can affect the ASC's value. For example, a sharp increase in the net reimbursement for pain cases can positively affect the ASC's value whereas a sharp decrease in GI reimbursement could negatively affect the center's value.

MCVal used the weighted average cost of capital (WACC) for this valuation. The basic formula for computing the WACC is:

$$WACC = (Ke) \times (We) + (Kd(pt)[1-t] \times Wd)$$

Where:

WACC	=	Weighted average cost of capital
Ke	=	Company's cost of common equity capital
Kd(pt)	=	Company's cost of debt capital (pre-tax)
We	=	Percentage of equity capital in the capital structure
Wd	=	Percentage of debt capital in the capital structure
t	=	Tax rate

The equity portion of the WACC was calculated by using the build-up model. The basic formula is:

$$Ke = Rf + RPm + RPs + RPu$$

Where:

Ke	=	Expected rate of return on the subject security
Rf	=	Rate of return on a risk free security
RPm	=	Risk premium associated with the market
RPs	=	Risk premium associated with a small company
RPu	=	Risk premium associated with Tara

MCVal used the 20-year Treasury bond rate as of the valuation date for its risk-free rate. The long-term market equity risk premium and small stock premiums (10th decile) were reported in the 2001 *Yearbook of Stocks, Bonds, Bills, and Inflation*, published by Ibbotson Associates.

A specific risk premium of 6 percent was selected for Tara to compensate for the risks associated with the departure of the urology surgeons, the potential risk posed by Rhett Surgery Center as a new competitor, their reliance on a smaller number of physicians, and the uncertainty surrounding changes in the APCs.

The equity component of the WACC is as follows:

Ke	=	5.6% + 7.8% + 4.63% + 6%
Ke	=	24.03%

The capital structure used in the calculation came from a review of the average of similar companies in the industry and the Center's current capital structure. This

is estimated at 25 percent debt and 75 percent equity. The cost of debt is based upon available financing terms which was 7 percent.

The WACC is as follows:

$$\text{WACC} = (24.03\%)\,(.75) + [7\%\,(1 - .39)\,(.25)]$$

$$\text{WACC} = 19.1\%$$

Based on the procedures described above, a WACC of 19 percent was applied to the cash flows.

Income Approach—DCF

The top three specialties performed at Tara are GI, pain, and ear, nose, and throat (ENT) respectively. GI and pain account for 62 percent of the total case volume. The center's medical supply costs per case are significantly lower than industry averages of $175 to $200 per case, due to the lower medical supply costs associated with GI and pain cases.

Due to the retiring urologist, cash flow projections reflect a loss in urology volumes in year 1 of the projection period. Management has indicated that the urologist will be hard to replace immediately; however, management believes that the development of the new competing surgery center (resulting in attracting more physicians to the area) will assist it in recruiting a replacement urologist to the area by year 2. *Note:* The loss in surgeon volumes accounts for only a 4 percent decrease in total net revenues since the departure of their cases opens up the related time slots for other specialties to perform their cases. Exhibit 19.16 presents the projected cash flows for Tara Surgery Center for years 1 to 5, the terminal year of the projection period, as well as the final estimate of value of the invested capital for Tara.

Future growth was estimated at 3 percent. Terminal year income was adjusted for normalized depreciation.

The exhibit illustrates the results of the 4.1 percent decrease in total net operating revenues from $4.14 million in the normalized base year to $3.97 million in year 1 of the projection period. This is primarily due to the loss in urology cases due to the retiring surgeon.

DCF Analysis. After all of these steps have been performed, the final value created may/may not need to be adjusted for applicable discounts (see later in report). In addition, the value created is invested capital (total equity + interest-bearing debt). Depending on the agreed-on value, the related interest-bearing debt may/may not need to be removed from invested capital value. In the case of Tara, the agreed-on value was equity. As a result, the analyst would need to deduct debt from total invested capital.

Value Indication

Traditionally, the fair market value of the invested capital of ASCs has ranged from a multiple of 3.5 to 6.5 times EBITDA. This range assumes moderate growth, reasonable capital expenditures, and moderate working capital needs. In the case of Tara Surgery Center, the value conclusion falls within the low end of the range due to the substantial loss in urology volumes and related net revenues, and other risk factors noted.

Exhibit 19.16 Projected Cash Flows and DCF Value

	Year 1	Year 2	Year 3	Year 4	Year 5	Terminal Year
Earnings After Income Taxes	351,118	354,628	358,479	362,098	365,907	523,165*
Cash Flow Adjustments:						
Plus: Depreciation & Amortization	291,125	312,553	333,982	355,411	376,839	150,000
Less: Required Annual Capital Expenditures	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)
Less: Incremental Working Capital Requirements	21,824	(20,687)	(21,599)	(22,387)	(23,375)	(18,118)
Net Discretionary Cash Flow	514,067	496,494	520,862	545,122	569,371	505,047
Terminal Value						3,156,543
	0.5	1.5	2.5	3.5	4.5	4.5
Present Value Factor (mid-point convention)	0.916698	0.770335	0.647340	0.543983	0.457129	0.457129
Present Value of Cash Flows	471,245	382,467	337,175	296,537	260,276	1,442,948
Sum of Present Values (Year 1 to Year 5)	1,747,700					
Present Value of Terminal	1,442,948					
Fair Market Value Indication (Total Invested Capital Level)	3,190,648					

*Excess depreciation runs out.

The value conclusion is shown in Exhibit 19.17.

Market Approach: Guideline Public Company Method

The guideline public company method relies on similar publicly traded companies as a source of market multiples. Market multiples include:

- Invested capital/sales
- Invested capital/EBITDA
- Invested capital/EBIT
- Price/net income

In the healthcare services market, publicly traded companies typically trade on very different financial dynamics from individual businesses such as Tara.

MCVal found four potential companies that offered outpatient surgery. However, only two were pure-play, public multispecialty ambulatory surgery center companies. These companies were selected as guideline companies. All of the companies had total revenues in excess of $189 million, which substantially exceeds Tara's. Similarly, the total EBITDA levels greatly exceed Tara's. Other discrepancies are related primarily to company size, acquisition growth, access to capital, diversification, and the like. Because the public healthcare services companies are not comparable in business description and/or size to Tara, MCVal decided that the guideline public company method was not applicable to value Tara.

Exhibit 19.17 Value Conclusion

	Year 1	Year 2	Year 3	Year 4	Year 5	Terminal Year
Earnings After Income Taxes	351,118	354,628	358,479	362,098	365,907	523,165
Cash Flow Adjustments:						
Plus: Depreciation & Amortization	291,125	312,553	333,982	355,411	376,839	150,000
Less: Required Annual Capital Expenditures	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)	(150,000)
Less: Incremental Working Capital Requirements	21,824	(20,687)	(21,599)	(22,387)	(23,375)	(18,118)
Net Discretionary Cash Flow	514,067	496,494	520,862	545,122	569,371	505,047
Terminal Value						3,156,543
	0.5	1.5	2.5	3.5	4.5	4.5
Present Value Factor (mid-point convention)	0.916698	0.770335	0.647340	0.543983	0.457129	0.457129
Present Value of Cash Flows	471,245	382,467	337,175	296,537	260,276	1,442,948
Sum of Present Values (Year 1 to Year 5)	1,747,700					
Present Value of Terminal	1,442,948					
Fair Market Value Indication (Total Invested Capital Level)	3,190,648	3.7 x year 1 EBITDA				
Less: Long-Term Debt	698,760					
Fair Market Value Indication (Equity Level)	2,491,888					
Fair Market Value Indication (per unit assuming 225 units)	$ 11,075					

Market Approach: Guideline Company Transaction Method

The guideline company transaction method involves the selection of pricing multiples of individual transactions in similar companies in the marketplace. Information on these transactions and their multiples is obtained using sources such as Irvin Levin and Associates and *Pratt's Stats*. If comparable data and multiples can be found, they are applied, where appropriate, to the subject company.

To apply a "reasonableness check" for the income approach value, multiples presented in Exhibit 19.18 were applied to Tara's year 1 net operating revenue and EBITDA. These multiples were based on 10 private surgery center transactions that occurred over the past 12 months. It is important to obtain recent pricing multiples to account for changes in the marketplace (i.e., government-imposed regulations). The use of old, or "stale," data can cause an erroneous conclusion.

The range of values generally yielded a higher value than the income approach did. Note that these multiples should be taken only at face value since they do not consider the internal dynamics of the center (e.g., the departure of key surgeons). By multiplying the related year 1 revenues and EBITDA figures (Note: Multiples are typically applied against historical revenue and income. However, this would misrepresent Tara.) with their corresponding multiples, the analyst arrived at a value range of $2.8 million to $4.8 million

Exhibit 19.18 Guideline Company Transactions

Transaction Scenarios		Transaction Multiples		Value Indication (TIC)	
		High	Low	High	Low
Revenues, Year 1	3,968,301	1.2	0.7	$4,800,000	$2,800,000
EBITDA, Year 1	862,745	5.5	3.5	$4,700,000	$3,000,000

The income approach yielded a value of $3.2 million, which is at the very low end of the range. Although there are very limited data concerning the other surgery center transactions, this figure does provide some comfort since the risks of the potential loss revenues from the departing surgeons and other risks would put the value of the center on the low side.

Asset Approach

The book value of the equity portion of the business is $1.845 million. To the extent that the income approach value and the cost approach value are similar, the analyst should consider using the cost approach. MCVal performed an analysis estimating the underlying tangible assets of the business and has determined that the book value reasonably reflects fair market value. As a result, the *asset* approach is deemed relevant and MCVal considered this approach in the valuation as a "floor" value.

Reconciliation

While we have considered each of the three approaches to value Tara we have primarily relied on the income approach to value the surgery center. Based on the facts, circumstances, and limiting conditions of the engagement, the value indication at the equity level is $2.49 million (IC of $3,190,648 minus $698,760 in total debt). MCVal was engaged to perform a fair market value opinion of a 1 percent limited interest in the Tara Surgery Center, L.P. As a result, assuming 225 partnership units, the analyst has arrived at an equity level, before any applicable discounts, of *$11,075 per unit* ($2.49 million divided by 225 units). However, the analyst must consider the following discounts and decide their applicability to Tara.

Discounts

Depending on the standard of value agreed on for the valuation, at times it is necessary to consider the usage of minority and marketability discounts. Each of the following paragraphs briefly describes the rationale associated with each discount, and whether the discount was deemed applicable in this valuation.

Minority Discounts

In determining the fair market value of the equity of Tara Surgery Center, MCVal considered the applicability of a minority discount to the estimate of value based on the following key control factors:

- Lack of control over day-to-day operations
- Lack of control over dividends and distribution

Lack of Control Over Day-to-Day Operations. Per the operating agreement, the business, property, and affairs of the company shall be managed by or under the direction of the management board. The management board consists of 11 center members who supplied regular input to Joe Scarlett and the rest of his staff regarding management and operational issues. They are also considered the center's "customers." This is a key issue when determining control issues related to the ASC. Since the physician-investors are free to use other ASCs in the immediate area, it is in the best interests of the ASC to consider the physician-investor's input regarding management and operational issues. As a customer and shareholder, a physician's lack of management control is often mitigated.

Lack of Control over Dividends and Distributions. Per the operating agreement, distributions of distributable cash and accumulated cash shall be made quarterly. It is the board's decision and intention to pay quarterly distributions to the extent of available cash. In addition, Tara has had a long history of paying distributions to its shareholders. Available cash is defined as EBITDA less estimated capital expenditures in the next quarter, less a reasonable and defined working capital reserve. The potential consequence of failure to make regular distributions could result in the physician choosing to sell back the units to the ASC and/or choosing to use other ASCs.

Based on our consideration of the above factors regarding the facts and circumstances regarding the partnership agreement, it is our opinion that a discount related to a minority ownership interest is not applicable.

Marketability Discount

A marketability discount deals with an investor's ability to convert ownership interests into cash proceeds in a minimal amount of time. Some of the key factors considered are:

- Restrictions on transfer of shares
- Availability of a ready market
- Determination of pricing

Restrictions on Transfer of Shares. The general partner shall have the first option to purchase all or any portion of the ASC interests of the selling owner. If the ASC and then the other limited partners do not elect to acquire all of the units offered, the remaining portions may be offered to a qualified owner at a predetermined buyout price of approximately four times EBITDA. For regulatory purposes, the board must have an independent third party perform the valuation of the ASC before any shares are transferred or resyndicated.

Availability of a Ready Market. MCVal also considered who the most likely investor for these units would be: another physician-surgeon, who would generally satisfy the criteria noted in the above paragraph, the company itself, or a third-party investor (company in the surgery facility business). MCVal concluded that a reasonable population of likely investors does exist.

In addition, Tara has an interest in being the market maker in its own units in order to attract future investors and provide a ready exit for disgruntled physician-investors who could potentially harm its operations and relations with the physician community.

Determination of Pricing. The operating agreement states that the center will have the option to purchase all or any portion of the interest of the selling member at an agreed-upon purchase price related to a "triggering event," such as ceasing to practice medicine. The provision also allows for the pricing of the units at 100 percent of the value upon certain "triggering events," such as the death or retirement of the member.

Conclusion on Discounts

Based on all of the above factors, MCVal concluded that a discount for lack of marketability was not applicable to the fair market value estimate of the equity of Tara Surgery Center. This opinion could be materially different if the nature of Tara Surgery Center's business changes or if other facts and circumstances discussed above change. (*Note:* Some analysts would apply some discounts here to reflect the risk of future changes.)

Final Value

Exhibit 19.19 Tara Surgery Center Final Indication of Value

FMV of Invested Capital at Enterprise Level	$3,190,648
Less: FMV of Debt	$ 698,760
Equals: FMV of Equity at Enterprise Level	$2,491,888
FMV of Equity at Minority Level	$ 11,075

(Assuming 225 Partnership units)

ADDENDUM 2—VALUATION OF ASHLEY HOSPITAL

The Engagement

Background

It is March 15, 2002. Ashley Hospital (Ashley or Hospital) is a 225-bed acute care hospital located in an urban area in (certain state). A regional health system, Wilkes Hospital (Wilkes), has communicated an interest in acquiring Ashley to expand its network and gain access to the community. The board of directors of Wilkes has engaged Mission Critical Valuations (MCVal) to provide a fair market value analysis of Ashley. The board has indicated that the facility will be acquired in an asset purchase transaction and that certain nonoperating assets will be excluded. No interest-bearing debt will be included.

Exhibit 19.20 Case Facts

Name of Hospital:	Ashley Hospital, a private not-for-profit or 501 (c)(3) hospital
Purpose of Valuation:	The valuation will be used by Wilkes' Board of Directors and Management in assessing the potential acquisition of Ashley
Standard of Value:	Fair market value
Valuation Date:	03/15/02

Information Request

MCVal provided a written information request for the following data:

- Annual financial statements (audited or compiled income statements and balance sheets) for the last five fiscal years, 1998 through 2001
- Interim financial statements, year-to-date 2002 and same period 2001
- Operational reports for the last four years and the most recent year-to-date period detailing:
  - Inpatient admissions
  - Outpatient volume
  - Patient days
  - Adjusted patient days
  - Other operating data for the facility
- Detailed financial statements and operational reports for the hospital
- Detailed discussion regarding services provided at the hospital
- Any detailed operating and capital budgets for the hospital
- A list and description of the outstanding accounts receivable as of the valuation date, including an aged accounts receivable report
- A list and description of prior stock transactions and details of any offers to buy assets or interests in the hospital
- A listing of employees:
  - Name
  - Compensation

  - Average hours worked per week
  - Benefits
  - Responsibility
  - Tenure
- A summary of any outstanding contingencies or liabilities not described in the financial statements provided, including all outstanding litigation
- A historical summary of the company including actual dates of formation and a discussion of the hospital's growth
- Development projects in place
- Company budget and projections
- Company capital structure detail: debt, equity, and preferred equity
- Detailed information concerning facility leases including:
  - Square footage
  - Rental rates
  - Terms of lease
- Details related to physician partnerships
- Service area demographic data

To gain a basic understanding as to the profitability and underlying assets and liabilities of the Hospital, MCVal reviewed the latest 12-month income statement ending December 31, 2001, as well as the balance sheet dated December 31, 2001. The subject hospital generated approximately $112.7 million in net operating revenue and approximately $12.9 million of EBITDA. The balance sheet as of December 31, 2001 shows that Ashley has approximately $20.1 million in assets limited as to use, $20.2 million in cash and investments, approximately $16.6 million of operating working capital, $3.1 of other assets, and approximately $50.5 million in net plant, property and equipment. Assets limited as to use, cash, and marketable securities are nonoperating assets and as a result will not be included in this valuation. The net book value of the hospital prior to subtracting debt obligations and excluding nonoperating assets is approximately $70.2 million. Based on a preliminary analysis of the financial statements and based upon a basic knowledge of the hospital operations, it appears that the valuation will utilize each of the three approaches to value.

Reminder

The asset approach takes into consideration the cost of replicating a comparable asset, security, or service with the same level of utility. In a general sense, the asset approach typically is considered in healthcare valuations when the value derived exceeds the value generated from the income or market approach. To the extent that the asset approach value is significantly below that of the market and income approaches, it may not be heavily relied on in healthcare valuations.

The market approach estimates value by comparing the value of similar assets, securities or services (hereinafter collectively referred to as the guidelines) traded or transacted in a free and open market. The value of the subject can be estimated by adjusting the value of the guidelines for qualitative and quantitative differences.

(continues)

The income approach estimates value by analyzing the historical financial information and to estimating the future level of cash flows to be generated by the subject company. Once an appropriate rate of return is estimated for the subject company, the cash flow stream is discounted or capitalized back to present value, which represents value to an investor.

Understanding the Industry

- The healthcare industry faces the challenge of continuing to provide quality patient care while dealing with rising costs, strong competition for patients, and a general reduction of reimbursement rates by both private and government payers. In many areas, both private and government payers have reduced the scope of what may be reimbursed and have reduced reimbursement levels for what is covered. Changes in medical technology, population demographics, existing and future legislation, and competitive contracting for provider services by private and government payers may require changes in healthcare facilities, equipment, personnel, or services in the future.
- Although the business outlook for hospitals has significantly improved over the last year, the industry continues to face significant challenges. Inpatient utilization, average lengths of stay, and average occupancy rates continue to be negatively affected by payer-required preadmission authorization, utilization review, and payer pressure to maximize outpatient and alternative healthcare delivery services for less acutely ill patients. Increased competition, admissions constraints, and payer pressures are expected to continue. To meet these challenges, the industry has expanded many of its facilities to include outpatient centers and upgraded facilities and equipment, and has offered new programs and services. Positive industry dynamics include increased admissions growth driven by positive demographic shifts, increased government reimbursement, and decreased negotiating power of managed care companies.
- Over the past several years, for-profit hospitals have begun to represent a sizable portion of the market. This was due to the consolidation of or the closing of weak not-for-profit hospitals. Also increasing market share (1999) were hospitals with fewer beds. Nearly three-fourths of hospitals have fewer than 200 beds, more than one-fifth of hospitals have between 200 and 499 beds, and 5 percent of hospitals have more than 500 beds.
- Healthcare interest groups have spent the past two years fighting to restore more than $50 billion in Medicare and Medicaid spending growth taken away by the Balanced Budget Act (BBA) of 1997. In 2001, these interest groups will have a new fight as the Balanced Budget law approaches expiration in 2002 and 2003. A jump in healthcare spending is likely to spur another round of healthcare budget-cutting by the federal government.
- Without new legislation to extend the budget law's tight caps, Medicare and Medicaid spending is likely to accelerate if many of the BBA's provisions terminate on schedule in 2002 and 2003. The Congressional Budget Office (CBO) projects 7.2 percent average annual growth for Medicare and 8.6 percent average annual growth for Medicaid from 2001 through 2011, compared with 3.2

percent and 6.3 percent for both programs, respectively, from 1996 through 2000.
- Balanced Budget law brought Medicare spending growth to a near halt in 1998 and 1999, including a reduction in spending in 1999, but "giveback" bills in consecutive years have boosted Medicare growth rates. The CBO estimates a growth rate for Medicare of 10.5 percent per year for 2000 and 2001, just four-tenths of a percentage point below the spending growth rate for the six years that preceded the budget law.

Site Visit

MCVal is ready to perform the site visit. Much like the ASC valuation from Addendum 1, MCVal, if possible, should have a solid understanding of the nature of the business, the industry, and the facility's financial operating history before the site visit. Similarly, MCVal should formulate a list of pertinent questions to pose to the hospital management team before the meeting day. Nine key concepts to understand to perform the valuation are:

1. Major competitors
2. Reasons why admissions (and subsequently revenues) increased over the past two years
3. Top 10 physicians in terms of both admissions and surgical cases
4. Anticipated changes in the hospital's overall payer mix (i.e., managed care contract changes, etc.)
5. New employees hired in the past year
6. Staffing level changes over the next year
7. Reasons for increases/decreases in medical supplies
8. Estimated capital expenditures over the next three to five years
9. Types of equipment, quantities, manufacturer's name and ID number, and date of purchase

Performing the Valuation

Income Approach—Preparatory Analysis

At this point, MCVal has determined that the income approach using a DCF method on an invested capital basis is most likely the primary method to value Ashley Hospital. (See Chapter 4 for more detail on the DCF method.) MCVal must understand certain information (Exhibit 19.21) and follow several basic yet key steps in performing an income approach analysis on the hospital.

Analyst Conclusions. Inpatient admissions increased 4 percent from FYE 2000 to FYE 2001. Similarly, the average length of stay (ALOS) increased 5 percent over the same respective time frame due to the addition of the Heart Center.

Payer Mix. It is important that MCVal understands the components of the hospital's payer mix and the related revenues associated with each payer class: that is, what percentage of the hospital's business is associated with Medicare, Medicaid,

Exhibit 19.21 Ashley Hospital Data

	FYE 2000	FYE 2001	Normalized Base Year
Census Data:			
Beds in Service	225	225	225
Inpatient Admissions	9,076	9,423	9,423
Inpatient Days	45,932	50,199	50,199
Avg. Daily Census—Inpatient	125.8	137.6	137.6
Percent of Occupancy—Inpatient	56%	61%	61%
Discharge Data:			
Discharges	9,076	9,423	9,423
Discharge Days	45,932	50,199	50,199
Avg. Length of Stay (ALOS)—days	5.06	5.33	5.33

Exhibit 19.22 Ashley Hospital Payer Mix Percentages—Expressed as a Percentage of Net Revenue

	FYE 2000	FYE 2001
Self-Pay	5.8%	6.1%
Commercial	4.5%	4.8%
Medicare	51.5%	52.9%
Medicaid	10.8%	11.3%
Managed Care	23.4%	23.3%
Other	4.0%	1.6%
	100%	100%

managed care, self-pay, or other? (See Exhibit 19.22) Understanding this concept also will allow MCVal to estimate future net revenue per patient day figures.

Preparation of Exhibit 19.22 provides the valuation analyst with a framework for understanding the payer mix. Medicare accounts for approximately half (53 percent) of the hospital's payer mix and managed care and commercial payers make up approximately 28.1 percent of the payor mix. The payer mix expressed as a percentage of charges yields a different result because of different payer reimbursement rates. Medicare and Medicaid typically reimburse hospitals for services at lower rates than managed care and commercial payers. Over 64 percent of the hospital's net revenue comes from the federal government through Medicare and Medicaid reimbursement. A reasonable question to ask management is how this breakdown would look based on overall gross charges.

Staffing Roster. The analyst may review the following key components of the hospital's staffing roster: name, rate of pay, date of hire, and estimated full-time equivalent (FTE) status. Since employee salaries and wages are the largest controllable expense allocation for any hospital, MCVal may review the internal dynamics of the staffing roster to benchmark the staffing ratios to the reported historicals as of a current date. Then the analyst will be able to understand the recent changes in staffing levels of the hospital (i.e., department overstaffing, etc.)

An analysis of the hospital's staffing roster (Exhibit 19.23) allows MCVal to make assessments and groupings. An FTE designates the work status of a particular individual, whereby 1.0 FTE is the equivalent of an individual working 40 hours per week. An analysis of staffing based on activity levels in the hospital can also be performed. The standard ratio used in the hospital market is FTE per adjusted occupied bed or hours worked per adjusted patient day. The inpatient days in the hospital are adjusted to take into consideration outpatient services provided by the hospital. This determines adjusted bed occupancy or adjusted patient days in a hospital facility. The key driver of revenue in any healthcare facility is volume. For hospitals the volume is described in terms of adjusted daily census or adjusted patient days.

According to the staffing roster, the hospital employed a total of 1,015 FTEs. Although it would not prove time efficient to diagram and assess each and every employee's location within the hospital, it would be important to pinpoint those departments that employ the largest number of individuals. Exhibit 19.23 summarizes this information.

Exhibit 19.23 Ashley Hospital FTE by Department

Code	Department	FTEs	% of Total
6120	ICU-CCU	61.38	6.0%
8050	Nutrition and Food Service	52.59	5.2%
8090	Housekeeping	51.29	5.1%
6230	Emergency Service	51.23	5.0%
7181	Medical Information Services	50.87	5.0%
7010	Lab Services	47.89	4.7%
6124	Progressive Care Unit	44.56	4.4%
6027	Unit 16	44.25	4.4%
6023	Unit 3	43.71	4.3%
	Total Displayed	447.76	44.1%
	Total FTEs	1,015	100%

Employee Benefits. MCVal must obtain the appropriate benefit structure from management for projection purposes. The industry standard benefit package for a hospital like Ashley is approximately 7.0 and 12.0 percent for payroll taxes and employee benefits, respectively. However, each hospital is different. It is important to understand the nature of this concept to accurately portray total employee compensation figures.

Gross Revenue. Exhibit 19.24 summarizes gross charge data. Gross charges in a hospital can be over two times the actual net revenue of the facility. As a result, gross charges are used in an analysis to determine the percentage writeoff of contractual allowances (the amount of gross charges that Medicare and other payers do not reimburse for a particular procedure). For example, the gross revenue of the subject hospital during fiscal year 2001 was approximately $230.5 million, while contractual allowances and charity care for that same period were approximately

$117.8 million, leaving net revenue of $112.7 million. Other operating income was approximately $1.8 million. The total net revenue for Ashley for the year ended December 31, 2001 was $114.5 million. MCVal should notice that the pharmacy department accounted for the largest gross revenues (15.5 percent of revenues, or $13.8 million) of any department in the hospital.

Exhibit 19.24 Ashley Hospital Gross Revenue Analysis

Code	Department	% of Revenue
707	Pharmacy	15.5%
701	Lab Services	10.4%
621	Surgical Services	9.5%
625	Central Services	8.3%
703	Cardiology	6.7%
623	Emergency Services	6.0%
617	Respiratory Services	5.2%
706	CT	5.1%
704	Radiology-Diagnostic	3.5%
612	ICU-CCU	3.2%
705	MRI	3.0%
	Total Displayed	76.5%
	Total Gross Revenue	100%

Trend Analysis—Income Statement. The valuation analyst must analyze net revenue and operating expenses (Exhibit 19.25). The total net revenues for the hospital have increased 8 percent, from $105.8 million in 2000 to $114.5 million for 2001. The primary determinant of this revenue increase is a 7 percent increase in adjusted patient days from 70,700 to 75,336 days. The net revenue per adjusted patient day was relatively flat from year to year. Total expenses, as a percentage of net revenues, have increased from 87 percent in 2000 to 89 percent as of 2001. This is primarily due to the increases in staffing costs over the same respective time frames.

Trend Analysis—Balance Sheet. Have total assets increased or decreased based on the historical information? total liabilities? total interest-bearing debt? working capital? Does the net income as reported on the balance sheet equal the net income as reported on the income statement(s)? (See Exhibit 19.26.)

Analyst Conclusions. The total asset base has increased from $118.0 million to $122.4 million for FYE 2000 to FYE 2001. The primary reason for the increase in the total asset base is due to investments.

Total liabilities actually have decreased from $62.5 million to $59.7 million over the same time period. The decrease in total liabilities is due primarily to decreases in long-term debts.

Exhibit 19.25 Ashley Hospital Revenue and Expenses

	FYE 2000	FYE 2001	FYE 2000	FYE 2001
Total Net Operating Revenues	$105,843,828	$114,488,780	100%	100%
Adj. Patient Days (includes OP)	70,700	75,336	n/a	n/a
Net Revenue per Adj. Patient Day	1,497	1,520	n/a	n/a
Major Operating Expenses:				
Salaries	34,923,060	40,073,310	33.0%	35.0%
Contract Labor	2,951,846	4,312,173	2.8%	3.8%
Employee Benefits	6,245,180	6,645,852	5.9%	5.8%
Professional Fees	3,534,247	3,937,569	3.3%	3.4%
Purchased Services	4,473,889	5,986,923	4.2%	5.2%
Drugs	2,941,417	3,554,613	2.8%	3.1%
Supplies	9,930,106	10,891,296	9.4%	9.5%
Utilities	1,604,097	1,690,860	1.5%	1.5%
Other Operating Expense	11,709,831	10,986,135	11.1%	9.6%
Bad Debts	13,898,947	13,448,703	13.1%	11.7%
Total	$ 92,212,620	$101,527,434	87.1%	88.7%

ValTip

Assets limited as to use and *investments* are considered here "excess assets" and are added back to the resulting DCF value to arrive at the total value. "Assets limited as to use" refers to those assets earmarked for specific activities (i.e., related future capital expenditures, etc.). "Investments" refers to cash/marketable securities.

Exhibit 19.26 Ashley Hospital Balance Sheet

	As of 12/31/00	As of 12/31/01
Total Current Assets	$ 39,126,085	$ 39,338,153
Net Assets, Limited as to Use	$ 18,579,788	$ 17,317,078
Net Property, Plant, and Equipment	$ 50,155,773	$ 50,530,326
Investments	$ 6,314,859	$ 12,191,622
Other Assets	$ 3,838,604	$ 3,046,641
Total Assets	$118,015,109	$122,423,820
Total Current Liabilities	$ 10,154,491	$ 11,882,748
Long Term Debt	$ 52,367,154	$ 47,817,509
Total Liabilities	$ 62,521,645	$ 59,700,257
Net Assets	$ 55,493,464	$ 62,723,563
Total Liabilities & Restricted Assets	$118,015,109	$122,423,820

Normalized Base Year. The purpose of the normalized base year is to adjust the most recent income statement, or the ones MCVal utilizes, to reflect the hospital's true operational profile for the projection period. During the site visit, the analyst should discuss these adjustments with hospital management to understand their likelihood. In addition, any related interest expense also should be removed to calculate the entity's debt-free cash flow, the type of cash flow utilized here. In addition, an appropriate income tax rate, incorporating both state and federal taxes, should be calculated.

Some of the adjustments made to Ashley Hospital include ones for:

- *Bad Debts.* Bad debt expenses were adjusted to reflect the historical averages for the facility, per conversations with management.
- *Employee Benefits.* Payroll taxes and employee benefits were adjusted at 7.0 percent and 12.0 percent respectively, per industry norms. This is also based on conversations with management regarding future benefit offerings.
- *Interest Expense.* Interest expense was eliminated to derive debt-free cash flow.
- *Income Taxes.* A blended federal and state income tax rate was calculated.

DCF Assumptions. The assumptions related to the discounted cash flow model can be projected to arrive at a value. The analyst applies acquired knowledge of the operations from the previous steps to a five-year projection of cash flow typically prepared by, or in some cases with, management.

As mentioned previously, the hospital has experienced substantial growth over the past year (Exhibit 19.27); however, a new center, Butler Center, will soon be completed approximately one mile away from the hospital. According to management, it is likely the new surgery center will result in lost outpatient surgical cases.

Exhibit 19.27 illustrates a 3.7 percent increase in total net operating revenues, from $112.7 million in the normalized base year to $116.9 million in year 1 of the projection period. These projections are based on discussions with management based on the opening of the new surgery center. As a result, total outpatient cases decrease 5 and 3 percent respectively in years 1 and 2 and are flat in year 3 before reaching standard growth levels by year 4 of the projection period. The exhibit illustrates the projection period for years 1 to 3 of the projection.

Inpatient Admissions. According to conversations with hospital management, inpatient admissions are expected to increase at approximately 2.0 percent into the near future. As a reasonableness check, this assumption is confirmed by analyzing current capacity levels (i..e. current occupancy rate) as well as demographic projections for the next three to five years. According to demographics, the population growth estimates for the local area are approximately 2 percent. As a result, the 2 percent inpatient admission growth rate does not seem unreasonable.

Outpatient Days. Total outpatient days for the hospital are expected to decrease in year 1 due to the opening of Butler Center in the immediate area. According to management, it is expected that approximately 5 percent of its outpatient surgical caseload will depart to this new center in the upcoming year. After year 1, outpatient days decrease 3 percent and remain flat in year 2 and 3, respectively. By year 4, management expects that the total outpatient caseload will increase by 2 percent thereafter.

Exhibit 19.27 Ashley Hospital Revenue Assumptions

	Normalized Base Year	Projections		
		Year 1	Year 2	Year 3
Inpatient Admissions	9,423	9,894	10,191	10,497
Annual Growth %		2.0%	2.0%	2.0%
Outpatient Days	25,137	23,880	23,164	23,164
Annual Growth %		-5.0%	-3.0%	0.0%
ALOS	5.33	5.33	5.33	5.33
Patient Days	50,199	52,709	54,290	55,919
Adjusted Patient Days (IP & OP)	75,336	76,589	77,454	79,083
Net Revenue Per Adj. Patient Day	$ 1,495.86	$ 1,525.77	$ 1,541.03	$ 1,556.44
Annual Growth %		1.0%	1.0%	1.0%
Net Operating Revenues Growth	$112,691,832	$116,857,615	$119,358,974	$123,087,550
Other Operating Revenue	1,796,949	1,796,949	1,796,949	1,796,949
Net Revenues	114,488,781	118,654,564	121,155,923	124,884,499

ValTip

Simply adding inpatient days plus outpatient cases would be erroneous since patients who are treated on an outpatient basis in the hospital are not measured in terms of days. As a result, the hospital applies an outpatient conversion factor to convert the outpatient cases into outpatient days. This is necessary to arrive at adjusted patient days, the term for measuring a hospital's occupancy rate and capacity.

An example of the conversion factor for adjusted patient days follows: The hypothetical calculation states that every outpatient case in the Hospital accounts for 75 percent or 0.75 of every inpatient day.

Total Outpatient Cases × Outpatient Conversion Factor =
Total Outpatient Days [33,516 × .75 = 25,137 Inpatient Days]

Adjusted Patient Days. Total patient days are the sum of inpatient days and the provided (computed) outpatient days. Adjusted patient days are the driving force behind a hospital's core value.

Average Length of Stay (ALOS). With increasing technologies and decreasing reimbursements, it is not uncommon for a hospital's ALOS to decrease or, more conser-

vatively, remain flat. Such is the case with Ashley. According to conversations with management, ALOS has been projected to be flat in the projection period.

Net Revenue per Adjusted Patient Day. This is calculated by dividing the hospital's net operating revenues by the adjusted patient day total provided by management. This calculation, coupled with adjusted patient days, drives the value under the discounted cash flow methodology.

DCF Analysis. After all of these steps have been performed, the final value created is the Total Invested Capital (total equity + interest-bearing debt). Depending on the deal, the related interest-bearing debt may/may not need to be removed from the total invested capital value indication.

Discount Rate. The discount rate is often the most contested part of the income approach (Chapter 5). The weighted average cost of capital (WACC) is a highly regarded method for estimating an appropriate discount rate, although the direct equity method can be used as well. Two factors must be considered in estimating the present value of any projected cash flow stream:

1. *Financial Risk*. The risk inherent in an entity's financial structure (i.e., the utilization of debt versus equity financing)
2. *Business Risk*. The uncertainty associated with the economy, industry, and the inherent risk profile of the subject entity

The discount rate utilized for a hospital must appropriately encapsulate the risks associated with that hospital. Some of the risks associated with Ashley include:

- *New surgery center.* As management indicated, a new free-standing ambulatory surgery center, Butler Center (the ASC), will be completed within the next calendar year. Management has also indicated that the new ASC has already started to recruit surgeons from the hospital pool. As a result, the analyst should assume that some of the current case volumes will depart to the ASC and the discount rate and/or projections should incorporate this inherent risk.
- *Nature of business.* The hospital is heavily reliant upon the individual surgeons at the facility. External forces, such as the development of other new centers, can tempt these surgeons to perform their cases elsewhere. As a result, the discount rate should incorporate some factor to mitigate the risks associated with the business.

In estimating the WACC, we relied on the following formula:

$$WACC = (Ke \times We) + (Kd(pt) \times [1 - t] \times Wd)$$

Where:

WACC	=	Weighted average cost of capital
Ke	=	Company's cost of common equity capital
Kd(pt)	=	Company's cost of debt capital (pre tax)

We = Percentage of equity capital in the capital structure

Wd = Percentage of debt capital in the capital structure

t = Tax rate

The equity portion of the WACC was calculated by using the Build Up model. The basic formula is as follows:

$$Ke = Rf + RPm + RPs + Rpu$$

Where:

Ke = Expected rate of return on the subject security

Rf = Rate of return on a risk free security

RPm = Risk premium associated with the market

RPs = Risk premium associated with a small company

RPu = Risk premium associated with Ashley

The risk-free rate used in the calculation came from the yield of 20-year Treasury bonds as of the valuation date. The long-term market equity risk premium and the small stock premium were reported in the *2001 Yearbook of Stocks, Bonds, Bills, and Inflation*, published by Ibbotson Associates. A risk premium of 2 percent was added for Ashley due to increased competition which many other hospitals are also experiencing.

The equity component of the WACC is as follows:

Ke = 6% + 7.8% + 4.63% + 2%

Ke = 20.43%

The capital structure is based on an industry standard which is 25 percent debt and 75 percent equity. The cost of debt is based upon available financing terms and was 7 percent.

The WACC is as follows:

WACC = (20.43%) (.75) + [7% (1−.40) (.25)]

WACC = 16.4%

Based on the procedures described above, a WACC of 16 percent was applied to the cash flows.

Value Indication

The value indication is shown in Exhibit 19.28.

Value indications should incorporate the related excess assets, if applicable. Failure to recognize these assets would result in an erroneous value indication. However, in this case the valuation has been performed exclusive of excess assets.

Exhibit 19.28 Ashley Hospital: Invested Capital Value

	Normalized Base Year	Year 1	Year 2	Year 3	Year 4	Year 5	Terminal
Net Income	3,942,119	5,677,070	5,885,506	6,268,380	6,782,215	7,331,443	10,699,192*
Cash Flow Adjustments:							
Plus: Depreciation		5,353,033	5,653,033	5,953,033	6,253,033	6,553,033	1,500,000
Less: Incremental Working Capital		(596,273)	(250,136)	(372,858)	(459,629)	(477,053)	(402,754)
Less: Capital Expenditures		(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)
Net Discretionary Cash Flow		8,933,829	9,788,403	10,348,555	11,075,618	11,907,423	10,296,438
Terminal Value (Gordon Growth)							79,203,369
		0.50	1.50	2.50	3.50	4.50	4.50
Present Value Factor		0.9285	0.8004	0.6900	0.5948	0.5128	0.5128
Present Value of Cash Flows		8,295,060	7,834,745	7,140,600	6,588,173	6,106,000	40,615,488

Sum of Present Values (Years 1-5)	$35,964,371
Present Value of Terminal (Gordon Growth)	$40,615,488
Total Present Value of Cash Flows	$76,579,859

5.2 x Yr 1 EBITDA

*Excess depreciation runs out (normalized income).

As a result, the fair market value indication at the enterprise or total invested capital level based on the DCF is approximately $77 million.

Market Approach: Guideline Public Company Method

The guideline public company method relies on similar publicly traded companies as a source of market multiples. Market multiples include:

- Invested capital/sales
- Invested capital/EBITDA
- Invested capital/EBIT
- Price/net income

In the healthcare services market, publicly traded companies typically trade on very different financial dynamics from individual businesses. MCVal has found seven publicly traded hospital companies to evaluate.

These companies had total revenues ranging from $200 million to $1.4 billion, which substantially exceeds the net revenues for Ashley. Typically, hospital companies trade based on their ability to grow earnings and cash flow in their business (as most companies are valued). However, public hospital companies make use of their more accessible capital to grow by acquisition in addition to same-facility growth. Historically, the for-profit or proprietary hospital market has acted as a consolidator of a very large and very fragmented business. As a result, hospital companies tend to trade at multiples that reflect that acquisition growth. Publicly traded hospitals have traded at invested capital to EBITDA multiples above 9. As a result of acquisition growth opportunities, size diversification, geographic diversification, and the overall lack of comparability with the subject hospital, the guideline public company method of the market approach has not been utilized in the valuation of Ashley Hospital.

Market Approach: Guideline Company Transaction Method

The guideline company transaction method includes pricing multiplies from individual transactions of similar companies in the marketplace. Information is developed through various sources, such as Irvin Levin and Associates, *Pratt's Stats*, and *Mergerstat Review*. The data are then applied, where appropriate, to the subject company. (See Exhibit 19.29.)

Ten hospital transactions were utilized in the analysis. In each of the 10 transactions, the actual purchase terms were not included; actual historical financial statements of the targets were also unavailable. The result is that the information reflects a purchase price in which there is no way to accurately determine assets included or excluded in the transaction. For example, was working capital part of the deal? Many transactions exclude working capital.

In addition, there is no way to:

- Determine the impact of special terms in the transactions including the form of consideration paid for the deal
- Accurately perform any financial analysis of the target hospital
- Determine overall profitability, payer mix, services provided by the target hospital or the trends in those areas over the last three to four years

Exhibit 19.29 Ashley Hospital: Company Transactions

Transaction Scenarios	(rounded)	Transaction Multiples High	Transaction Multiples Low	Value Indication (TIC) High	Value Indication (TIC) Low
Normalized Revenue	$114,000,000	1.0	0.5	$114,000,000	$57,000,000
Normalized EBITDA	$ 13,000,000	6.0	4.0	$ 78,000,000	$52,000,000

Facts and circumstances surrounding an individual hospital facility are typically disparate. Payers in various parts of the country reimburse for services at different levels. Staffing costs in various parts of the country are different as are many other operating costs. As a result, there is less reliability of the results of the market transactions. Based on many years of research and close relationships with buyers and sellers, MCVal understands the basic range of valuation multiples that are typically paid for hospitals. As a result, the guideline company transaction method is utilized in the valuation. However, it is given less consideration and used only as a sanity check.

Asset Approach

The asset approach is based on the principle of substitution, where it is assumed that a buyer will not pay more for a particular investment than the costs to obtain an investment of equal worth. In most cases, the asset approach assumes that the business will no longer be fully operational or is not considered a going-concern business. Hence, we have encountered the following difficulties upon considering the asset approach to value Ashley Hospital. It does not consider the identifiable intangible assets and unidentifiable intangible assets of the business—goodwill, without considerable effort and time.

The net book value of Ashley Hospital prior to subtraction of debt, excluding assets limited as to use, and marketable securities, was approximately $71.7 million. This compares with the $76.6 million under the income approach to value. To provide a measure of accuracy to the asset approach, third-party equipment and real estate appraisers were engaged. The results of that analysis indicated that book value was 5 percent higher than the value of all assets of the facility as determined by the appraisers.

Based on the cost approach to value, the fair market value of Ashley Hospital excluding assets limited to use, cash, and marketable securities was approximately $68 million.

Reconciliation

While we have considered each of the three approaches to value, we have relied primarily on the income approach and, more particularly, the DCF method. Based on the facts, circumstances, and limiting conditions of the engagement, the fair market value of Ashley Hospital, as of a March 15, 2002, is $77 million (rounded). This excludes the related excess assets and interest bearing debt. This value is also within the range of the guideline transactions method results and includes $9 million of goodwill over the net asset value, which seems reasonable in this valuation.

CHAPTER 20

Valuation of Intangible Assets

The importance of intangible assets in the modern economy has been highlighted in several publications. According to the *Report of the Brookings Task Force on Intangibles:*

> A significant part of the current discrepancy between market value and book value of firms appears due to investments in intangibles. Equity prices would have to fall by two-thirds or more, across the board, for this discrepancy to disappear.[1]

Professor Baruch Lev was more detailed in his *Intangibles: Management, Measurement, and Reporting,* when he said:

> . . . the mean market to book ratio of the Standard and Poor [sic] (S&P) 500 companies (among the largest five hundred companies in the United States) has continually increased since the early 1980s, reaching the value of –6.0 in March 2001. This suggests that of every $6 of market value, only $1 appears on the balance sheet, while the remaining $5 represents intangible assets. Hence, some argue, the current focus on intangibles is warranted.
>
> This, however, raises various issues. Stock prices are very volatile, and many decreased sharply in 2000–01. Stock prices can therefore not solely support an interest in intangibles. Moreover, a longer historical perspective revealed that in the 1950s and 1960s market to book ratios also substantially exceeded one. So, what is new? Finally . . . the market to book ratio hovered near unity in the late 1970s and early 1980s. Where were intangible assets then? Surely firms possessed some intangibles (patents, brands) before the mid-1980s. Merck had significant pharmaceutical patents, and Coca-Cola had a precious brand name. Are recent intangibles different from previous ones or more valuable now than in the 1970s? What is unique about current intangibles?[2]

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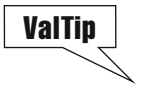
[1] Margaret Blair and Steven Wallman, *Unseen Wealth: Report of the Brookings Task Force on Intangibles* (Washington, DC: Brookings Institution Press, 2001), p. 13. (Used throughout with permission.)

[2] Baruch Lev, *Intangibles: Management, Measurement and Reporting* (Washington, DC: Brookings Institution Press, 2001), p. 8. (Used throughout with permission.)



The growth of intangible assets relative to tangible assets has been a major force propelling our U.S. economy.

Much of the value of intangible assets is linked to service industries (high tech and traditional professional services as well as others), which in 1999 accounted for approximately 39 percent of the total U.S. economy.[3] Our economy's traditional avoidance of identifying and measuring these nebulous assets creates the framework for sometimes questionable decision making. As the Brookings Task Force stated:

> The failure to understand the role of intangible assets in the aggregate economy will lead repeatedly to missed diagnosis of economic problems and inappropriate policy responses . . . . More comprehensive and more reliable information about intangibles in high tech companies would reduce information asymmetry and the associated market volatility and restore market confidence.[4]

Until June 29, 2001, when the Financial Accounting Standards Board (FASB or Board) issued new financial reporting standards for intangible assets [Statement of Financial Accounting Standards (SFAS) No. 141, *Business Combinations*, and SFAS No. 142, *Goodwill and Other Intangible Assets*], the recording of intangible assets on the accounting statements was often inconsistent or incomplete. Collectively, the two Statements ended pooling of interests and goodwill amortization, and substituted a framework for analyzing goodwill for impairment.[5]

This chapter discusses recent changes in regulatory requirements leading to the identification and measurement of intangibles. We discuss at length the Statements of Financial Accounting Standards No. 141 and No. 142 as well as the Best Practices Guide issued by the American Institute of Certified Public Accountants titled *Assets Acquired in a Business Combination to be used in Research and Development Activities: A Focus on Software, Electronic Devices, and Pharmaceutical Industries*. We present a detailed example of the valuation of seven types of identifiable intangible assets, plus an analysis of goodwill including goodwill impairment. Various checklists are provided in the accompanying workbook that will aid the valuation analyst in the identification and measurement of intangible assets.[6]

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[3] Blair and Wallman, *Unseen Wealth,* p. 11.

[4] *Ibid.,* pp. 25–27.

[5] Portions of FASB Statement No. 141, *Business Combinations,* and No. 142, *Goodwill and Other Intangible Assets,* and FASB Concepts Statement No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements,* copyrighted by the Financial Accounting Standards Board, 401 Merritt 7, P.O. Box 5116, Norwalk, CT 06856-5116, U.S.A., are reprinted with permission. Complete copies of these documents are available from the FASB.

[6] Portions of various documents, copyrighted by the AICPA, Harborside Financial Center, 201 Plaza Three, Jersey City, NJ 07311-3881, have been used in the development of this chapter. Complete copies of these documents are available from the AICPA.

The intent of this chapter is to provide a theoretical and practical overview of intangible assets and their valuation. Although this chapter focuses mostly on the valuation of intangible assets and goodwill under new FASB rules, the concepts and models are applicable to other purposes as well. Entire books have been devoted to the subject; three of the most notable are *Valuation for Financial Reporting* by Michael J. Mard, James R. Hitchner, Steven D. Hyden, and Mark L. Zyla (New York: John Wiley & Sons, Inc., 2002), *Valuing Intangible Assets* by Robert F. Reilly and Robert P. Schweihs (New York: McGraw-Hill, 1999) and *Intellectual Property: Licensing and Joint Venture Strategies*, 2nd Edition, by Gordon V. Smith and Russell L. Parr (New York: John Wiley & Sons, Inc., 1998).

WHAT ARE INTANGIBLE ASSETS?

The Brookings Task Force defined intangibles as: ". . . nonphysical factors that contribute to or are used in producing goods or providing services, or that are expected to generate future productive benefits for the individuals or firms that control the use of those factors."[7]

The International Valuation Standards were a bit more precise when they defined intangible assets as: "assets that manifest themselves by their economic properties; they do not have physical substance; they grant rights and privileges to their owner; and usually generate income for their owner. Intangible assets can be categorized as arising from: Rights; Relationships; Grouped Intangibles; or Intellectual Property."[8]

The International Valuation Standards go on to define each of those categories.

Professor Lev defined an intangible asset as: "a claim to future benefits that does not have a physical or financial (a stock or a bond) embodiment."[9]

As brief as Professor Lev was, the FASB was even briefer when it stated intangible assets are: "assets (not including financial assets) that lack physical substance."[10]

The FASB also indicates that intangible assets do not include goodwill, and provides specific guidance to the identification of intangible assets other than goodwill. The FASB also indicates that separability and transferability are fundamental prerequisites to the meaningful codification and measurement of intangible assets. Such issues are discussed in depth later in the chapter.

ValTip

Intangible assets receiving legal protection are called intellectual property, which is generally categorized as: patents, copyrights, trade names (-marks, -dress), trade secrets, and know-how.

[7] *Ibid.,* p. 3.

[8] International Valuation Standards Committee, Guidance Note No. 4, *Intangible Assets* (July 2001), at 3.15.

[9] Baruch Lev, *Intangibles*, p. 5.

[10] FASB, Statement of Financial Accounting Standards No. 141, *Business Combinations* (June 2001), p. 124.

Each of these definitions is correct and appropriate, but does not go quite far enough. Intangible assets are a subset of human capital, which is a collection of education, experience, and skill of a company's employees, and structural capital, which includes such items as process documentation and the company's organizational structure. Intangible assets are the codified *physical* descriptions of specific knowledge that can be owned and readily traded.

WHY ARE INTANGIBLE ASSETS SO DIFFICULT TO MEASURE?

Traditional accounting rests on the foundation of historical cost, that is, if there is an invoice, there is an asset and it can be measured. The converse, however, invites ridicule: If there is no invoice, there is no asset. The Brookings Task Force was succinct regarding the measurement difficulties when it said that "[B]ecause one cannot see, or touch, or weigh intangibles, one cannot measure them directly but must instead rely on proxies, or indirect measures to say something about their impact on some other variable that can be measured."[11]

Over the years, the FASB has sought to change the historical cost focus of measurement. In fact, the FASB has increasingly required fair value determination as applicable to specific Statements of Financial Accounting Standards.

ValTip

There are approximately three dozen FASB Statements which require consideration of fair value.[12]

As of this writing, the scope of a new FASB project, "Disclosure of Information about Intangible Assets not Recognized in Financial Statements,"[13] focuses on the disclosure of internally generated intangible assets that are not recognized in the financial statements. This project will study how the identification and measurement of internally generated intangible assets should be reported in the financial statements. Such potential reporting ranges from footnote disclosure to full financial statement disclosure.[14] Clearly, the identification and measurement of intangible assets is becoming recognized and accepted by the market, regulators and the accounting profession.

[11] Blair and Wallman, *Unseen Wealth*, p. 15.
[12] Michael Mard, *Task Force Report to Business Valuation Subcommittee* (2000).
[13] FASB Proposal for a New Agenda Project, *Disclosure of Information about Intangible Assets Not Recognized in Financial Statements* (2001).
[14] *Ibid.*

NATURE OF INTANGIBLE ASSETS

Opportunity cost is a mainstay of finance. Many finance courses focus on the opportunities available to utilize tangible assets, with the goal of applying those tangible assets to the opportunity with the highest return. Opportunities not selected can be looked at as returns foregone, or opportunity cost. The physical reality is that tangible assets can only be in one place at one time.

Lev looked at the physical, human and financial assets (all considered tangible) as competing for opportunities as rival, or scarce, assets "in which the scarcity is reflected by the cost of using the assets (the opportunity foregone)."[15]

Such assets distinguish themselves from intangible assets in that intangible assets do not rival each other for incremental returns. In fact, intangible assets can be applied to multiple uses for multiple returns. As Lev says:

> The non-rivalry (or non-scarcity) attribute of intangibles—the ability to use such assets in simultaneous and repetitive applications without diminishing their usefulness—is a major value driver at the business enterprise level as well as at the national level. Whereas physical and financial assets can be leveraged to a limited degree by exploiting economies of scale or scope in production (a plant can be used for at most three shifts a day), the leveraging of intangibles to generate benefits—the scalability of these assets—is generally limited only by the size of the market. The usefulness of the ideas, knowledge, and research embedded in a new drug or a computer operating system is not limited by the diminishing returns to scale typical of physical assets (as production expands from two to three shifts, returns decrease due, for example, to the wage premium paid for the third shift and to employee fatigue). In fact, intangibles are often characterized by increasing returns to scale. An investment in the development of a drug or a financial instrument (a risk-hedging mechanism, for example), is often leveraged in the development of successor drugs and financial instruments. Information is cumulative, goes the saying.[16]

IDENTIFICATION AND CLASSIFICATION OF INTANGIBLE ASSETS

Identification of intangible assets is as broad as the mind is creative. There are the familiar intangibles, such as customer base, in-process research and development, and technology, as well as intellectual property such as patents, copyrights, trademarks, trade secrets, and know-how. Depending on the industry, the value of such assets typically accounts for a vast majority of an enterprise's total intangible value. There are also intangible assets peculiar to an industry or enterprise such as bank deposits.

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[15] Baruch Lev, *Intangible*, p. 22.
[16] *Ibid.,* pp. 23–24.

In an attempt to provide some structure to the creativity of business and to enhance the longevity of its financial model, the FASB has classified intangibles into five categories:

1. Marketing-related intangible assets
2. Customer-related intangible assets
3. Artistic-related intangible assets
4. Contract-based intangible assets
5. Technology-based intangible assets[17]

The FASB goes on to provide an explanation and examples for each of the categories. Notably, assembled workforce is excluded because it fails the separability and transferability tests. A company may have the best employees of the highest value in the world, but they have no value if separated from the business. Further, the Board was not confident of the reliability of the measurement tools most often used for assembled workforce and its associated intellectual capital. The FASB instead chose to categorize assembled workforce within the components of goodwill.[18]

MEASUREMENT OF INTANGIBLE ASSETS

The theoretical and practical framework for the valuation approaches applicable to intangible assets (the asset approach, the income approach and the market approach) are covered elsewhere in this book.

Since return requirements increase as risk increases and since intangible assets are more risky for a company than are tangible assets, it is reasonable to conclude that the returns expected on intangible assets typically will be at or above the average rate of return (discount rate) for the company as a whole.

A major fundamental underlying the valuation of intangible assets is the concept of the tension between risk versus return. As Lev states:

> Assuredly, all investments and assets are risky in an uncertain business environment. Yet the riskiness of intangibles is, in general, substan-

[17] FASB Statement of Financial Accounting Standards No. 141, *Business Combinations* (June 2001), at A14.
[18] *Ibid.,* at 39.

> tially higher than that of physical and even financial assets. For one, the prospects of a total loss common to many innovative activities, such as a new drug development or an internet initiative, are very rare for physical or financial assets. Even highly risky physical projects, such as commercial property, rarely end up as a loss . . . A comparative study of the uncertainty associated with R&D and that of property, plant, and equipment confirms the large risk differentials: the earnings volatility (a measurement of risk) associated with R&D is, on average, three times larger than the earnings volatility associated with physical investment.[19]

The income approach is often used in the valuation of intangibles. Typically, two of three elements are known or can be computed, thus leading to a solution for the third element.

$$\text{If} \quad \frac{\$ \text{ Return}}{\text{Rate of Return}} = \text{Value for that intangible asset}$$

$$\text{Then} \quad \frac{\$ \text{ Return}}{\text{Value}} = \text{Rate of Return}$$

$$\text{And} \quad \text{Rate of Return} \times \text{Value} = \$ \text{ Return}$$

FAIR VALUE

The definition of *fair value* for financial reporting purposes under generally accepted accounting principles (GAAP) is stated by the FASB as:

> The fair value of an asset (or liability) is the amount at which that asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale.[20]
>
> In contrast, *fair market value* is defined in the Internal Revenue Code as: The price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts.[21]

[19] Baruch Lev, *Intangibles*, p. 39.
[20] FASB, Statement of Financial Accounting Standards No. 141, *Business Combinations* (June 2001), Appendix F.
[21] Internal Revenue Service, Revenue Ruling 59-60, § 2.02.

ValTip

A principal difference between the two definitions of value is that *fair value* for the business enterprise considers synergies and attributes of the specific buyer and specific seller, while *fair market value* endeavors to be a more objective standard, contemplating a hypothetical willing buyer and a hypothetical willing seller.

SFAS NO. 141, *BUSINESS COMBINATIONS*

A business combination occurs when an enterprise acquires net assets that constitute a business or equity interest of one or more enterprises and obtains control over that enterprise or enterprises.[22] Although there are certain exceptions, such as the acquisition of an equity interest held by minority shareholders and acquisitions of not-for-profit organizations, all business combinations as defined by the Statement should be accounted for using the purchase method of accounting. In SFAS No. 141, the use of the pooling of interests method was immediately prohibited. Application of the purchase method requires identification of all assets, tangible and intangible, of the acquiring enterprise.[23] Any excess of the cost of an acquired entity over the net amounts assigned to the tangible and intangible assets acquired and liabilities assumed will be classified as goodwill.[24]

This regulatory change reflects the FASB's recognition of the need for international comparability of accounting standards, which will bring U.S. accounting standards more in line with worldwide GAAP. As a result of capitalizing intangible assets and goodwill, the income statement will bear additional amortization reflecting the write-off of these capitalized assets. As such, many critics suggest that the elimination of pooling of interests will result in distorted income statements. These critics believe that the pooling of interests method results in greater consistency (and comparability with cash flow) of the reported income statements. The board's desire to promote greater international comparability of financial statements overrode the critics' desire to leave well enough alone.[25]

As stated earlier, the definition of intangible assets includes current and noncurrent assets (not including financial instruments) that lack physical substance.[26] An acquired intangible asset shall be recognized apart from goodwill if that asset arises from contractual or other legal rights. If an intangible asset does not arise from contractual or other legal rights, it shall be recognized apart from goodwill only if it is separable. That is, it must be capable of being separated or divided from the acquired enterprise and sold, transferred, licensed, rented, or exchanged (regardless of whether there is an intent to do so). An intangible asset that cannot be sold,

[22] FASB, Statement of Financial Accounting Standards No. 141, at 9.
[23] *Ibid.,* at 13-15.
[24] *Ibid.,* at 43.
[25] *Ibid.,* at B1-B17.
[26] *Ibid.,* Appendix F.

transferred, licensed, rented, or exchanged individually is still considered separable if it can be paired with a related contract, asset or liability and sold, transferred, licensed, rented, or exchanged. An important exception to the individual recognition of intangible assets is the value of an assembled workforce of "at-will" employees. Thus, the value of a group of employees, acquired in a business combination, who are not bound by an employment agreement will be recorded as part of goodwill regardless of whether the asset meets the criteria for recognition apart from goodwill.[27]

Residual value should factor into determining the amount of an intangible asset to be amortized and is defined as the estimated fair value of an intangible asset at the end of its useful life, less any disposal costs. A recognized intangible asset with an indefinite useful life should not be amortized until its life is determined to be no longer indefinite. If no legal, regulatory, contractual, competitive, economic, or other factors limit the useful life of an intangible asset, the useful life of that asset should not be considered indefinite.[28] The term "indefinite" does not mean infinite. A recognized intangible asset that is not amortized must be tested for impairment annually and on an interim basis if an event or circumstance occurs between annual tests indicating that the asset might be impaired.[29]

SFAS NO. 142, *GOODWILL AND OTHER INTANGIBLE ASSETS*

SFAS No. 142 applies to all acquired intangible assets, whether acquired singly, as part of a group, or in a business combination. The Statement mandates that goodwill shall not be amortized over a defined period; rather, goodwill must be tested for impairment at least annually at the "reporting unit" level (described in next paragraph). Although the FASB already had addressed asset impairment (originally SFAS No. 121, *Accounting for the Impairment of Long-lived Assets and for Long-lived Assets to be Disposed of*, now superseded with SFAS No. 144, *Accounting for the Impairment or Disposal of Long-lived Assets*), goodwill must be tested for impairment exclusively under the guidelines of SFAS No. 142.[30]

All goodwill reported in the financial statements of a subsidiary is to be tested for impairment as if the subsidiary were a stand-alone entity. A reporting unit is defined as an operating segment (SFAS No. 131, *Disclosures about Segments of an Enterprise and Related Information*) or one level below an operating segment (called a component). A component of an operating segment is a reporting unit if the component constitutes a business for which discrete financial information is available and segment management regularly reviews the operating results of that component. Goodwill would then be defined and allocated at this component level. Entities that are not required to report segment information in accordance with SFAS No. 131 are nevertheless required to test goodwill for impairment at the reporting unit level.[31]

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[27] *Ibid.*, at 39.
[28] FASB, Statement of Financial Accounting Standards No. 142, *Goodwill and Other Intangible Assets* (June 2001), at 11-14.
[29] *Ibid.*, at 17.
[30] FASB, Statement of Financial Accounting Standards No. 142, at 17–18.
[31] *Ibid.*, at 31.

All acquired goodwill should be assigned to reporting units depending on the assignment of other acquired assets and assumed liabilities based on the following criteria:

- The asset will be employed in or the liability relates to the operations of a reporting unit,
- The asset or liability will be considered in determining the fair value of the reporting unit.[32]

Goodwill is the excess of cost over the assets acquired and liabilities assumed, but this statement requires clarification. The allocation of goodwill to a reporting unit is contingent on the expected benefits from the synergies of the combination.[33] This goodwill allocation is required even though other assets or liabilities of the acquired entity may not be assigned to that reporting unit, that is, they may be assigned to other reporting units.

A relative fair value allocation approach similar to that used when a portion of a reporting unit is disposed of (see SFAS No. 144) should be used to determine how goodwill should be allocated when an entity reorganizes its reporting structure in a manner that changes the composition of one or more of its reporting units. Otherwise, SFAS No. 144 should not be followed. Rather, goodwill should be tested for impairment pursuant to SFAS 142.[34]

The measurement of the fair value of intangibles and goodwill can be performed at any time during the fiscal year as long as it is consistently applied from year to year. Although different measurement dates can be used for different reporting units, whichever date is selected for a subject reporting unit must be consistent from year to year. A detailed determination of the fair value of a reporting unit may be carried forward from one year to the next if all of the following criteria have been met:

- The assets and liabilities that comprise the reporting unit have not changed significantly since the most recent fair value determination.
- The most recent fair value determination results in an amount that exceeds the carrying amount of the reporting unit by a substantial margin.
- Based on an analysis of events, it is determined that the possibility is remote that a fair value determination will be less that the current carrying amount of the reporting unit.[35]

Goodwill of a reporting unit should be tested for impairment on an interim basis if an event occurs that would more likely than not reduce the fair value of a reporting unit below its carrying value. Examples of such events are:

- A significant adverse change in legal factors or in the business climate
- An adverse action or assessment by a regulator
- Unanticipated competition

[32] *Ibid.*, at 32.
[33] *Ibid.*, at 34.
[34] *Ibid.*, at 39.
[35] *Ibid.*, at 27.

- A loss of key personnel
- A more-likely-than-not expectation that a reporting unit or a significant portion of a reporting unit will be sold or otherwise disposed of
- The testing for recoverability under SFAS No. 144 of a significant asset group within a reporting unit
- Recognition of a goodwill impairment loss in the financial statements of a subsidiary that is a component of a reporting unit[36]

NATURE OF GOODWILL

ValTip

> Goodwill is the excess of the cost of an acquired entity over the net of the amounts assigned to assets acquired less liabilities assumed.[37]

For GAAP purposes, goodwill includes all amounts that fail the criteria of an identified intangible asset. The practitioner must understand that the nature of goodwill for financial reporting is different from goodwill as used in a legal setting. Such *legal goodwill* is generally considered to be all value above tangible asset value.

For financial reporting, it helps to consider the six elements of goodwill as follows:

1. The excess of the fair values over the book values of the acquired entity's net assets at the date of acquisition.
2. The fair values of other net assets that had not been recognized by the acquired entity at the date of acquisition.
3. The fair value of the "going-concern" element of the acquired entity's existing business.
4. The fair value of the expected synergies and other benefits from combining the acquiring entity's and acquired entity's net assets and businesses. Those synergies and other benefits are unique to each combination, and different combinations would produce different synergies and, hence, different values.
5. Overvaluation of the consideration paid by the acquiring entity stemming from errors in valuing the consideration tendered.
6. Overpayment or underpayment by the acquiring entity. Overpayment might occur, for example, if the price is driven up in the course of bidding for the acquired entity, while underpayment may occur in the case of a distress sale or fire sale.[38]

[36] *Ibid.*, at 28.
[37] *Ibid.*, Appendix F.
[38] FASB, Statement of Financial Accounting Standards No. 141, at B102.

The FASB explained its rationale for including the above elements:

- The board continues to believe that the following analysis of those components is useful in understanding the nature of goodwill. The first two components, both of which relate to the acquired entity, conceptually are not part of goodwill. The first component is not an asset in and of itself but instead reflects gains that were not recognized by the acquired entity on its net assets. As such, that component is part of those assets rather than part of goodwill. The second component also is not part of goodwill conceptually; it primarily reflects intangible assets that might be recognized as individual assets.
- As the board noted in both the 1999 Exposure Draft and the 2001 Exposure Draft, the third and fourth components *are* conceptually part of goodwill. The third component relates to the acquired entity and reflects the excess assembled value of the acquired entity's net assets. It represents the preexisting goodwill that was either internally generated by the acquired entity or acquired by it in prior business combinations. The fourth component relates to the acquired entity and acquiring entity jointly and reflects the excess assembled value that is created by the combination—the synergies that are expected from combining those businesses. The board described the third and fourth components collectively as "core goodwill."
- The fifth and sixth components, both of which relate to the acquiring entity, also are not conceptually part of goodwill. The fifth component is not an asset in and of itself or even part of an asset but, rather, is a measurement error. The sixth component also is not an asset; conceptually it represents a loss (in the case of overpayment) or a gain (in the case of underpayment) to the acquiring entity. Thus, neither of those components is conceptually part of goodwill.[39]

GOODWILL, INDEFINITE-LIVED INTANGIBLE ASSETS, AND THE IMPAIRMENT TEST

ValTip

Under SFAS No. 142, amortization of goodwill is not allowed. Instead, goodwill is tested annually for impairment.

The impairment test is a two-step process. In the first step, the fair value of the reporting unit is determined and compared with the carrying value of the reporting unit, including goodwill. Goodwill impairment exists if the carrying value of the reporting unit, including goodwill, exceeds the fair value of the reporting unit.

[39] *Ibid.,* at B103–B105.

The fair value of a reporting unit refers to the amount at which the unit as a whole could be bought or sold in a current transaction between willing parties. Quoted market prices in active markets are considered the best evidence of fair value and should be used as the basis for the measurement, if available. However, the market price of an individual share of stock (and thus the market capitalization of a reporting unit with publicly traded stock) may not be representative of the fair value of the reporting unit as a whole. Therefore, the quoted market price of an individual share of stock need not be the sole measurement basis of the fair value of a reporting unit. If a quoted market price of the shares of a reporting unit is not available, the estimate of fair value should be based on the best information available, including prices for similar assets and liabilities and the results of other valuation techniques.

A valuation technique based on multiples of earnings, revenue, or a similar performance measure may be used to estimate the fair value of a reporting unit if that technique is consistent with the objective of measuring fair value. Such measures may be appropriate, for example, when the fair value of an entity that has comparable operations and economic characteristics is observable and the relevant multiples of a comparable entity are known. Conversely, use of multiples would not be appropriate in situations in which the operations or activities of an entity for which the multiples are known are not of a comparable nature, scope, or size as the reporting unit for which fair value is being estimated.[40]

ValTip

A present-value technique is often the best available technique with which to estimate the fair value of a group of assets (such as a reporting unit).

If a present-value technique is used to measure fair value, estimates of future cash flows should be consistent with the objective of measuring fair value. Those cash flow estimates should incorporate assumptions that marketplace participants would use in their estimates of fair value whenever that information is available without undue cost and effort. Otherwise, an entity may use its own assumptions. Such cash flow estimates should be based on reasonable and supportable assumptions and should consider all available evidence. The weight given to the evidence should be commensurate with the extent to which the evidence can be verified objectively. If a range is estimated for the amounts or timing of possible cash flows, the likelihood of possible outcomes should be considered (see FASB Statement of Financial Concepts 7 [Conc. 7], *Using Cash Flow Information and Present Value in Accounting Measurements*).[41]

Step two requires performing what amounts to a new purchase price allocation as of the date of the impairment test—as if a business combination were consummated on the date of the impairment test. The allocation includes determining the

[40] FASB, Statement of Financial Accounting Standards No. 142, at 23–25.
[41] *Ibid.,* at 24.

ValTip

The second step of the goodwill impairment test is triggered if the carrying value of the reporting unit, including goodwill, exceeds the fair value of the reporting unit.

new fair values of both the originally recognized assets and new assets that may have been unrecognized at the valuation date but were developed between the acquisition date and the test date. The fair values of the assets at the test date are deducted from the fair value of the reporting unit to determine the implied fair value of goodwill at the test date. If the implied fair value of goodwill at the test date is lower than its carrying amount, goodwill impairment is indicated and goodwill is written down to its implied fair value.[42] Performing the new asset allocation answers the implied question, "What exactly is impaired: specifically identifiable tangible assets, specifically identifiable intangible assets, or goodwill?" This is where SFAS No. 144 controls.

As stated in SFAS No. 142:

> If goodwill and another asset (or asset group) of a reporting unit are tested for impairment at the same time, the other asset (or asset group) shall be tested for impairment before goodwill. For example, if a significant asset group were to be tested for impairment under Statement 121 [now 144] (thus potentially requiring a goodwill impairment test), the impairment test for the significant asset group would be performed before the goodwill impairment test. If the asset group was impaired, the impairment loss would be recognized prior to goodwill being tested for impairment.[43]

This means that impairment of other assets must also be recognized. For example, assume a company has a reporting unit with a fair value of $80,000,000 including goodwill of $35,000,000. The relative fair values of the assets have been estimated and recorded on the books of the acquirer as follows:

Recognized tangible assets	$15,000,000
Recognized identifiable intangible assets (with defined life)	30,000,000
Goodwill	35,000,000
Fair value of reporting unit	$80,000,000

After one year assume the carrying amount of certain assets after amortization are:

Recognized tangible assets	$12,000,000
Recognized identifiable intangible assets	25,000,000

[42] *Ibid.,* at 20–21.
[43] *Ibid.,* at 29.

Now assume an impairment test is performed at this time one year later and the fair value of the reporting unit is $70,000,000. This decline in value indicates impairment but not necessarily a goodwill impairment charge of $10,000,000. A new asset allocation must be performed to determine the new goodwill amount. The assumptions of the fair values as of the date of the impairment test are:

Fair value of:

Recognized tangible assets	$13,000,000
Unrecognized tangible assets*	1,000,000
Recognized identifiable intangible assets	20,000,000
Unrecognized identifiable intangible assets*	7,000,000
Goodwill	29,000,000
Fair value of reporting unit	$70,000,000

*Assets acquired or developed after the acquisition date.

The step two results are:

	Net Carrying Amount	Fair Value	Impairment Amount	SFAS Citation
Recognized tangible assets	$12,000,000	$13,000,000	$ 0	—
Unrecognized tangible assets	0	1,000,000	0	—
Recognized identifiable intangible assets (with a defined life)	25,000,000	20,000,000	5,000,000*	144
Unrecognized identifiable intangible assets	0	7,000,000	0	—
Goodwill	35,000,000	29,000,000	6,000,000	142
Total	$72,000,000	$70,000,000	$11,000,000	

*It is assumed that impairment is indicated under the applicable statement.

In this example, step one would fail by $2,000,000 (total carrying amount of $72,000,000 less fair value of $70,000,000), but the step two analysis shows required impairment expense of $11,000,000 ($5,000,000 under SFAS No. 144 and $6,000,000 under SFAS No. 142).

Of course, if the impairment test finds that the fair value of the reporting unit has not declined materially, no further analysis is required. *Increases* in goodwill value are never recognized.

TRANSITION: PREVIOUSLY RECOGNIZED GOODWILL

At the date SFAS No. 142 was initially applied, an entity had to establish its reporting units using its current reporting structure and the reporting unit guidance from the Statement. Recognized net assets, excluding goodwill, should be assigned to those reporting units. Recognized assets and liabilities that do not relate to a reporting unit, such as an environmental liability for an operation previously disposed of,

need not be assigned to a reporting unit. All goodwill recognized in an entity's statement of financial position should be assigned to one or more reporting units based on a reasonable and supportable analysis. Goodwill in each reporting unit should be tested for impairment as of the beginning of the fiscal year in which SFAS No. 142 is initially applied in its entirety. The amounts used in the transitional goodwill impairment test should be measured as of the beginning of the year of initial application and the first step of the impairment test should be completed within six months of adoption. Further, if events or changes in circumstances indicate that the goodwill of a reporting unit might be impaired before completion of the transitional impairment test, goodwill should be tested for impairment when the impairment indicator arises. In addition to the transitional goodwill impairment test, an entity should perform the required annual goodwill impairment test in the year the Statement is adopted. That is, the transitional goodwill impairment test may not be considered the first year's annual test unless an entity designates the beginning of its fiscal year as of the date for its annual impairment test.[44]

FINANCIAL REPORTING DISCLOSURES UNDER SFAS NOs. 141 AND 142

There are significant business combination and audit disclosures of which the valuation analyst must be aware. For intangible assets subject to amortization, the disclosures will include the following:

- The total amount assigned and the amount assigned to any major intangible asset class
- The amount of any significant residual value, in total and by major intangible assets class
- The weighted average amortization period, in total and by major intangible assets class[45]

For intangible assets not subject to amortization, the total amount assigned and the amount assigned to any major intangible asset class must be disclosed,[46] as should be the amount of goodwill allocated by reporting segment, pursuant to FASB (SFAS No. 131, *Disclosures about Segments of Enterprise and Related Information*).[47] Further, the amount of purchased in-process research and development assets acquired and written off in the period and the line item in the income statement in which the amount is written off or aggregated must be disclosed.[48]

For each period for which a statement of financial position is presented (that is, each period subsequent to the acquisition) disclosure should include the following:

- Total gross carrying amount and accumulated amortization by major class for intangible assets subject to amortization,

[44] *Ibid.*, at 54–58.
[45] FASB, Statement of Financial Accounting Standards No. 141, at 52; Statement of Financial Accounting Standards No. 142, at 44.
[46] *Ibid.*
[47] FASB, Statement of Financial Accounting Standards No. 141, at 52.
[48] FASB, Statement of Financial Accounting Standards No. 142, at 44.

- Total amortization expense for the period,
- Aggregate amortization expense for each of the five succeeding fiscal years presented.[49]

For intangible assets not subject to amortization, the total carrying amount and the carrying amount for each major intangible asset class must be disclosed. Further, the changes in the carrying amount of goodwill during the period include the following:

- Aggregate amount of goodwill acquired,
- Aggregate amount of impairment loss recognized,
- Amount of goodwill included in the gain or loss on disposal of all or a portion of reporting unit.[50]

Disclosure is more involved when an impairment loss is recognized. In such a situation, the following disclosures are required:

- A description of the facts and circumstances leading to the impairment.
- The amount of the impairment loss and the method of determining the fair value of the associated reporting unit (whether based on quoted market prices, prices of comparable businesses, or a present value or other valuation technique).
- If a recognized impairment loss is an estimate that has not yet been finalized, that fact and the reasons for it should be disclosed. Further, in subsequent periods the nature and amounts of any significant adjustments made to the initial estimate of the impairment loss must be disclosed.[51]

The valuation analyst must make sure their report and workpapers provide the client and auditor the information necessary for these disclosures.

IN-PROCESS RESEARCH AND DEVELOPMENT

In this age of technology, as research and development (R&D) activities become an increasingly large part of industrial activity, the financial reporting of assets to be used in R&D activities, especially specific in-process research & development (IPR&D) projects, has become increasingly controversial. Under purchase accounting, amounts assigned to IPR&D can account for a substantial part of the total acquisition value.

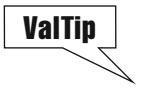
Acquired IPR&D is particularly prevalent in the pharmaceutical, software, and devices industries.

Those readers wishing a more detailed analysis of the subject should refer to the IPR&D Practice Aid.

SFAS No. 2, *Accounting for Research and Development Costs*, sets forth broad guidelines as to the activities that constitute R&D activities and defines R&D for GAAP purposes. Assets to be used in R&D activities are accounted for under FASB

[49] *Ibid.,* at 45.
[50] *Ibid.*
[51] *Ibid.,* at 47.

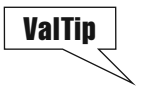
Interpretation No. 4, *Applicability of SFAS No. 2 to Business Combinations Accounted for by the Purchase Method*. GAAP generally requires that the fair value of acquired IPR&D be charged immediately to income, but may permit it to be amortized if an alternative future use exists for the asset. Separately identifiable assets include both tangible and intangible assets.



The subject of IPR&D has been comprehensively addressed in the AICPA Best Practices Guide, *Assets Acquired in a Purchase Business Combination to Be Used in Research and Development Activities: A Focus on Software, Electronic Devices and Pharmaceutical Industries* (IPR&D Practice Aid).

If such assets acquired to be used in R&D are to have costs allocated to them, they should demonstrate that they are controllable by the combined enterprise, have expected economic benefit, and have a reasonably reliable estimate of fair value associated with them. If an asset to be used in R&D activities is a specific IPR&D project, that project should have both substance and be incomplete.[52]

An acquiring company's interest in such assets is controllable by the combined enterprise when it can obtain benefit from the asset and control others' access to the asset. Acquired IPR&D has economic benefit when the acquiring company can demonstrate that such an asset, either singly or in combination with other assets, will be used in post-combination R&D activities.[53]



IPR&D can be generally defined as a research and development project that has not yet been completed. Acquired IPR&D is an intangible asset to be used in R&D activities.

The IPR&D Practice Aid is consistent with FASB Statement of Financial Accounting Concepts 6, *Elements of Financial Statements*, which states:

> Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events . . . An asset

[52] Randy J. Larson et al., *Assets Acquired in a Business Combination to Be Used in Research and Development Activities: A Focus on Software, Electronic Devices, and Pharmaceutical Industries* (New York: AICPA, 2001), at 3.2.04.
[53] *Ibid.,* at 3.2.02.

> has three essential characteristics: (a) it embodies a probable future economic benefit that involves a capacity, singly or in combination with other assets, to contribute directly or indirectly to future net cash flows, (b) a particular entity can obtain the benefit and control others' access to it, and (c) the transaction or other event giving rise to the entity's right to or control of the benefit has already occurred.[54]

Examples of control include:

- The combined enterprise has the ability to sell, lease, license, franchise or use its rights to the R&D asset acquired
- The combined enterprise has proprietary intellectual property rights, which it believes could be successfully defended if its ownership were challenged.[55]

The fair value of acquired IPR&D must be measurable, that is, it must be able to be estimated with reasonable reliability. The economic benefit of the product, service, or process that is expected to be generated by the IPR&D effort must be sufficiently determinable; that is, a reasonably reliable estimate of the future expected net cash flows can be made based on verifiable assumptions. If the following seven components of IPR&D can be estimated with confidence, the economic benefit of the IPR&D will be considered sufficiently determinable:

1. A market for the product
2. Time needed to commercialize and market the product
3. Potential customers and market penetration
4. The effects of competitors' existing or potential products
5. The combined enterprise's share of the market
6. The selling price
7. Production and related costs for the product[56]

The IPR&D life cycle will also enable the acquiring company to estimate its fair value with reasonable reliability. This life cycle includes:

- *Conceptualization*—The idea, thought or plan for a new product and the initial assessment of the potential market, cost, and technical issues related to it.
- *Applied research*—The planned search or critical investigation aimed at the discovery of new knowledge and the assessment of the feasibility of successfully completing the project.
- *Development*—The translation of the research into a detailed plan or design for a new product, service, or process.
- *Pre-production*—The early stage business activities necessary to commercialize the asset.[57]

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[54] FASB, Statement of Financial Accounting Concepts No. 6, *Elements of Financial Statements* (December 1985), at 25–26.
[55] Larson et al., at 3.3.14.
[56] *Ibid.,* at 3.3.26.
[57] *Ibid.,* at 3.3.40.

ValTip

To be recognized as assets, IPR&D projects must have substance, that is, sufficient cost and effort associated with the project to enable its fair value to be estimated with reasonable reliability.[58] Further, the IPR&D must be incomplete in that there are remaining technological, engineering, or regulatory risks.[59]

Recommended financial statement disclosure includes the identification of the following four items by the acquiring company:

1. A description of the projects to which value was ascribed, including the status of the project;
2. The values assigned to each of the assets acquired, including the amount of the in-process R&D charge;
3. The techniques used to value assets acquired to be used in R&D activities;
4. The key assumptions used in valuing the assets acquired to be used in R&D activities, such as;
   a. The time frame for cash flows expected to be realized, and
   b. The weighted average discount rates used in determining present values.[60]

Cost should be assigned to all identifiable tangible and intangible assets, including any resulting from R&D activities of the acquired company or to be used in R&D activities of the combined enterprise. The acquiring company should allocate a portion of the purchase price to each acquired identifiable intangible asset that possesses either of the following characteristics:

- Produces cash flows that are largely independent of cash flows generated by other assets
- Could realistically be licensed, sold, transferred, exchanged, or disposed of in a transaction in which it is the only asset[61]

Although the determination of fair value revolves around the three classic approaches to valuation, asset, market and income, the relief from royalty method and the excess earnings method are particularly relied on.

The analyst should review the following information to properly evaluate management's identification and classification of assets acquired (including IPR&D intangibles):

- Presentations to the board of directors
- Offering memoranda

[58] *Ibid.*, at 3.3.42.
[59] *Ibid.*, at 3.3.55.
[60] *Ibid.*, at 4.2.
[61] *Ibid.*, at 1.1.08–1.1.12.

- Due diligence reports
- Press releases (both of the acquiring and the acquired companies)
- Web site materials
- Analysts reports
- Industry reports[62]

Prospective Financial Information (PFI) is provided by management, but the sources, methodologies, procedures, adjustments, and application must be tested by the analyst. The IPR&D Practice Aid states:

> . . . PFI provided by management that is accepted by the valuation specialist without having been subjected to validating procedures by the valuation specialist would contradict the performance of best practices . . .[63]

Further, the IPR&D Practice Aid states:

> The valuation specialist does not simply accept PFI from management without investigating its suitability for use in the valuation analysis. The valuation specialist is responsible for evaluating the methodology and assumptions used by management in preparing the PFI and concluding whether the PFI is appropriate for use in valuing the assets acquired.[64]

The analyst should determine and document that a particular R&D project has substance. In addition to the consideration of the information reviewed to properly evaluate management's identification and classification of assets acquired, the basis for such documentation should include:

- Stage of completion of the project
- Treatment and emphasis given to the project in the company's product road-map for the technology
- Acquired company's R&D budget
- Acquired company's R&D planning documents and related status reports
- R&D costs incurred by project and estimated costs to complete the project[65]

The analyst must also conclude that the IPR&D project is incomplete as of the acquisition date based on the:

- Stage of development as indicated by the development milestones attained and yet to be reached
- Remaining technological, engineering, or regulatory risks to be overcome
- Remaining development costs to be incurred
- Remaining time to be spent to reach completion
- Probability of successful completion[66]

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[62] *Ibid.*, at 5.3.29.
[63] *Ibid.*, at 5.2.08.
[64] *Ibid.*, at 5.3.11.
[65] *Ibid.*, at 5.3.33.
[66] *Ibid.*

Finally, the analyst should indicate whether the asset acquired to be used in R&D activities has an alternative future use. If so, the value of that asset would be capitalized and amortized pursuant to SFAS Nos. 141 and 142. If the assets acquired to be used in R&D activities do not have an alternative use, those costs would be charged to expense as of the date of acquisition.[67]

TAX EFFECTS

Intangible assets are typically valued after tax. This means that the valuation analyst needs to provide for income taxes in any forecast of cash flow, include in normalized financial statements the tax amortization of intangible assets over a 15-year period per Internal Revenue Code Section 197, and capture in the fair value of that intangible asset the associated "amortization benefit," that is, the incremental value attributable to an intangible by virtue of its tax deductibility.

ValTip

Including such tax effects in the valuation process is common in the income and asset approaches, but not typical in the market approach, since any tax benefit is already factored into the quoted market price.

TRANSFER PRICING

ValTip

Transfer pricing takes place within non-arm's-length transactions, generally between subsidiary and parent. Because of perceived abuses in establishing tax-deductible charges between related entities, the IRS has been quite vigilant in reviewing such arrangements.

In Section 482 of the Internal Revenue Code, the IRS requires that such transactions be consummated under an arm's-length standard.[68] Therefore, transfer charges between related entities should be determined by the following three methods:

1. Comparable uncontrolled price method;
2. Comparable profits method; and
3. Profits split method.[69]

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[67] *Ibid.*
[68] IRC § 1.482-1(b) (2001).
[69] IRC § 1.482-4–6 (2001).

The comparable uncontrolled price method uses transfers of identical, or substantially similar, intangibles between unrelated parties as the benchmark for transfer pricing in the controlled transaction. If such uncontrolled transactions exist, the transaction would be deemed at arm's length. The definition of comparability permits the use of inexact comparables, but the uncontrolled transaction must be sufficiently similar to the controlled one to provide a reliable measure of an arm's-length result.[70]

The comparable profits method benchmarks the controlled intangibles transaction against profit measures (such as operating profits/sales or gross profit/operating expenses) of uncontrolled parties (i.e., uncontrolled transactions) that are similar to the controlled party and that are engaged in uncontrolled intangibles transactions that are similar to the controlled transaction.

The profits split method revolves around comparing the relative economic contributions the parties make to the success of a business venture and dividing the returns from that business venture based on the relative value of the contributions made. It allocates the combined operating profit between the controlled taxpayers by first allocating income attributable to routine transactions of each controlled party and then allocating residual profits remaining after such allocation. The relative value of intangible property may be measured by ordinary market value principles, capitalizing the development costs of the intangibles (less amortization) and, if possible, by comparison to the actual recent expenditures of the parties for relevant intangibles.[71]

Critical to a transfer pricing study is the necessary documentation supporting such an analysis. Principal documents include the following:

- An overview of the business
- A description of the organizational structure
- A description of the method selected
- Alternative methods considered and rejected
- A description of the controlled transactions and internal data used
- A description of the comparables used and adjustments made
- An explanation of any economical analysis and projections
- A description of relevant data obtained after the end of the tax year but before filing the return
- An inventory of significant documents relied on and a description of the record keeping system used to catalog and access those documents
- Any other documentation specifically required by § 482 of the Internal Revenue Code[72]

Transfer pricing studies and analyses are extremely complex and regulatory driven. The valuation analyst is encouraged to research this area thoroughly and obtain any additional guidance needed to complete the analysis accurately.

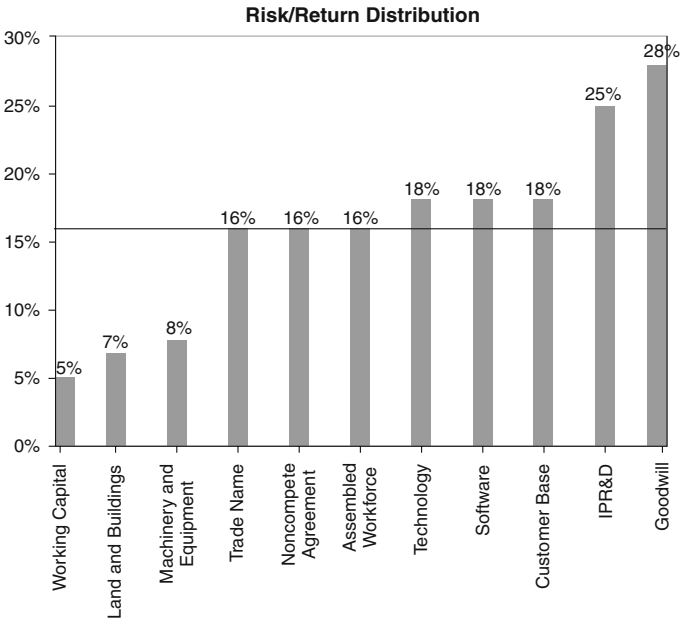
[70] IRC § 1.482-4(2) (2001).
[71] IRC § 1.482-5–6 (2001).
[72] IRC § 1.482-7(j)(2) (2001).

RETURNS ON AND OF CONTRIBUTORY ASSETS

Embedded in the concept that the fair value of an identifiable intangible asset is equal to the present value of the net cash flows attributable to that asset is the notion that the net cash flows attributable to the subject asset must recognize the support of many other assets, tangible and intangible, which contribute to the realization of the cash flows. The *contributory asset charges* (of cash flow) are based on the fair

ValTip

A company's tangible and intangible rates of return can be presented as (illustration only):



Where:

1. The midline of the distribution represents the *company's* discount rate,
2. Items below the midline represent returns on tangible assets (such as working capital: 5 percent, and land and buildings: 7 percent),
3. Items above the midline represent returns on intangible assets (such as IPR&D: 25 percent, and customer base: 18 percent), and
4. The highest rate of return represents the riskiest asset, goodwill.

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value of the contributory assets. After-tax cash flows for certain identifiable intangible assets are assessed charges representing a "return on" and a "return of" the contributory assets based on their fair values. The *return on* the asset refers to a hypothetical assumption whereby the project pays the owner of the contributory assets a fair return on the fair value of the hypothetically rented assets (in other words, return on is the payment for using the asset). For self-developed assets (such as assembled workforce or customer base), the cost to replace these assets is already factored into the cash flow analysis as part of the operating cost structure in the form of ongoing development expenses. Similarly, the return of fixed assets is included in the cost structure as depreciation. *Return of* is the cost to replace the asset and is deducted from the subject revenues.

DISCOUNT RATE CONSIDERATIONS FOR INTANGIBLE ASSETS

In FASB Conc. 7, fair value is the objective of present-value measurements of assets under initial recognition or "fresh-start" scenarios.[73] Two present value approaches are specified in Conc. 7: the expected cash flow approach and the traditional approach.[74] The expected cash flow approach focuses on the variations in the amount and timing of estimating cash flows and their relative probability of occurrence,[75] whereas the traditional approach attempts to capture those same factors by focusing on the selection of an interest rate that is commensurate with the risk.[76] Conc. 7 notes five elements of a present-value measurement, that should be taken into consideration:

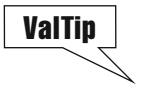
1. An estimate of the future cash flow, or in more complex cases, series of future cash flows at different times
2. Expectations about possible variations in the amount or timing of those cash flows
3. The time value of money, represented by the risk free rate of interest
4. The price for bearing the uncertainty inherent in the asset or liability
5. Other, sometimes unidentifiable, factors including illiquidity and market imperfections[77]

Estimates of future cash flows for intangibles are subject to a variety of risks and uncertainties, such as those listed. This is especially true of new product launches.

- The time it takes to bring the product to market
- The market and customer acceptance
- The viability of the technology

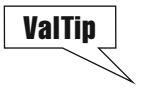
[73] FASB, Statement of Financial Accounting Concepts No. 7, *Using Cash Flow Information and Present Value in Accounting Measurements* (February 2000), at 25.
[74] *Ibid.,* at 42-54.
[75] *Ibid.,* at 45.
[76] *Ibid.,* at 44.
[77] *Ibid.,* at 39.

- Regulatory approval
- Competitor response
- The price and performance characteristics of the product[78]



The risk premium assessed to a new product launch should decrease as a project successfully proceeds through its continuum of development since the uncertainty related to each subsequent stage diminishes.

CASE STUDY: DETERMINING GOODWILL AND OTHER INTANGIBLE ASSETS IN A BUSINESS COMBINATION



Under GAAP, an acquiring company must record the fair value of the assets acquired in a business combination. SFAS No. 141 mandates such purchase accounting for all acquisitions.[79]

At face value, purchase accounting is a simple process—determine the total purchase price paid for an entity and allocate that purchase price to the various assets acquired. However, the valuation of intangibles is more complex. This section presents an example of a purchase price allocation.

There are numerous complexities in a purchase price allocation, and there are various challenges to be met along the way. These challenges include:

- Determining the purchase price—The purchase price is more than just the cash and/or publicly traded stock paid for an acquisition; notes issued and/or liabilities assumed increase the purchase price. Contingent considerations muddy the waters (e.g., contingent events, earnouts, restricted or non-marketable securities tendered).
- Performing a valuation of the acquirer to determine the value of its stock if the purchase price includes the payment of stock of a privately held acquirer.
- Identifying all acquired assets, tangible and intangible.
- Identifying if the sum of the fair values of the assets may exceed the purchase price.
- Dealing with situations where data for valuing or estimating the useful life of certain assets may be limited or not available.

[78] Larson et al., at 5.3.83.
[79] FASB, Statement of Financial Accounting Standards No. 141, at 13.

The example that follows is of an acquisition of the *assets* of a *privately held* corporation, and may differ in the treatment of certain issues compared with an acquisition of stock or public company acquisition. While the numerous steps and processes are presented sequentially, in the real world the various activities are performed simultaneously over a period of weeks, often by a staff of several analysts.

SFAS No. 141 states that the cost of an acquired entity should be measured with reference to cash payments, fair values of other assets distributed as consideration, and the fair values of liabilities incurred by an acquiring entity.[80] This *adjusted* purchase price may be alternatively defined as the sum of all cash and stock paid, debt incurred, and liabilities assumed. In this example, the adjusted purchase price is assumed to be $209,000,000 based on the following assumptions:

Cash paid*	$150,000,000
Liabilities assumed	
Current liabilities**	25,000,000
Current maturities of long-term debt	4,000,000
Long-term debt	30,000,000
Adjusted Purchase Price	$209,000,000

*Including capitalized acquisition costs, if applicable.
**Excluding externally funded debt.

As used here, the term *adjusted purchase price* equates to the total paid for all of the acquired company's assets, and includes all payments and liabilities assumed. It is important to distinguish this measurement from the concept of *invested capital,* which is defined as the sum of debt and equity in an enterprise on a long-term basis,[81] shown here as $184,000,000.

At this point, it is useful for the analyst to understand the overall magnitude of the intangible assets. This can be easily achieved by subtracting from the adjusted purchase price (or total asset value) the estimated fair value of the current and tangible assets. An analysis of the company's balance sheet and asset records as of the valuation date reveals the recorded or carrying value of the tangible assets is $67,500,000 which consists of:

	Carrying Value
Cash	$ 1,500,000
Marketable securities	4,000,000
Accounts receivable	17,000,000
Inventory	12,000,000
Prepaid expenses	3,000,000
Land and buildings	10,000,000
Machinery and equipment	15,000,000
Organization costs and other intangibles	5,000,000
Total current and tangible assets	$67,500,000

[80] *Ibid.,* at 20.
[81] American Society of Appraisers, *Business Valuation Standards*, p. 5.

The next step is to adjust recorded values to fair values, including final audited amounts, if available. In reality, separate valuations may be undertaken of material tangible assets. For example, a machinery and equipment appraiser may be brought in to independently value the fixed assets if it is determined that (a) the fixed assets are material, and (b) the book values do not represent fair value. Similarly, valued receivables and other current assets may not be reflected by their carrying value and require adjustment to fair value. For purposes of this analysis we are assuming that adjustments are required to certain asset accounts. After the adjustments, the fair values of the tangible assets are:

	Carrying Value	Fair Value
Cash	$ 1,500,000	$ 1,500,000
Marketable securities	4,000,000	8,000,000[a]
Accounts Receivable	17,000,000	17,000,000
Inventory	12,000,000	12,000,000
Prepaid expenses	3,000,000	3,000,000
Land and buildings	10,000,000	22,000,000[b]
Machinery and equipment	15,000,000	19,000,000[c]
Organization costs and other intangibles	5,000,000	0[d]
Total current and tangible assets	$67,500,000	$82,500,000

(a) Fair value of marketable securities, as marked to market.
(b) Fair value per real estate appraisal.
(c) Fair value per machinery and equipment appraisal.
(d) Written off (see Valuation of Current Assets section in this chapter).

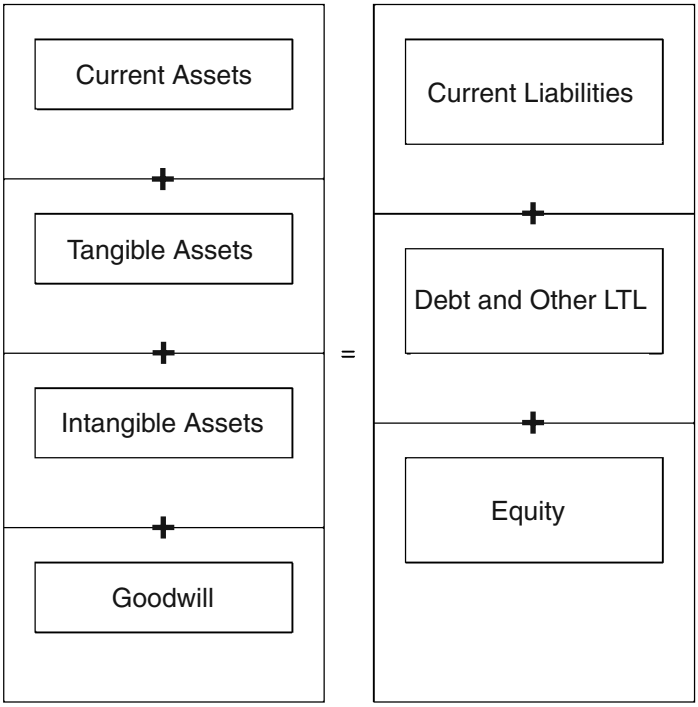
The fair value of the tangible assets is $82,500,000, so the "gap" available for all intangible assets is $126,500,000 ($209,000,000 – $82,500,000). Since a picture is worth a thousand words, the relationship can be illustrated by a "box analysis." Exhibits 20.1 and 20.2 set forth the general allocation formula according to the box analysis, where the left side of the exhibit represents the asset side of the balance sheet, and the right represents the liabilities and equity section of the balance sheet.

The assumed values of the various categories of assets, liability and equity are shown in Exhibit 20.2. The box analysis is quite useful, especially when the analyst is presented with complex purchase arrangements. Note that while current maturities of long-term debt are usually classified as current liabilities for accounting purposes, it is included with the long-term portion in our valuation analysis because it represents part of the total invested capital in the business.

In our example, the adjusted purchase price (cash paid plus liabilities assumed) is $209,000,000. By reference to Exhibit 20.2, it should be easily seen this equates to a total asset value of $209,000,000 and that the total of intangible assets and goodwill is $126,500,000.

Data gathering and management interviews are critical. Assume we have conducted an investigation of the target and its operations and have determined that there are seven intangible assets that are identifiable and are subject to being valued. At this point, the methodologies to be used to value the intangibles are farily clear, although the valuation and allocation process is fluid and changes in methods and approaches may be made as the engagement proceeds. The intangibles and the approach or

Exhibit 20.1 Box Analysis 1



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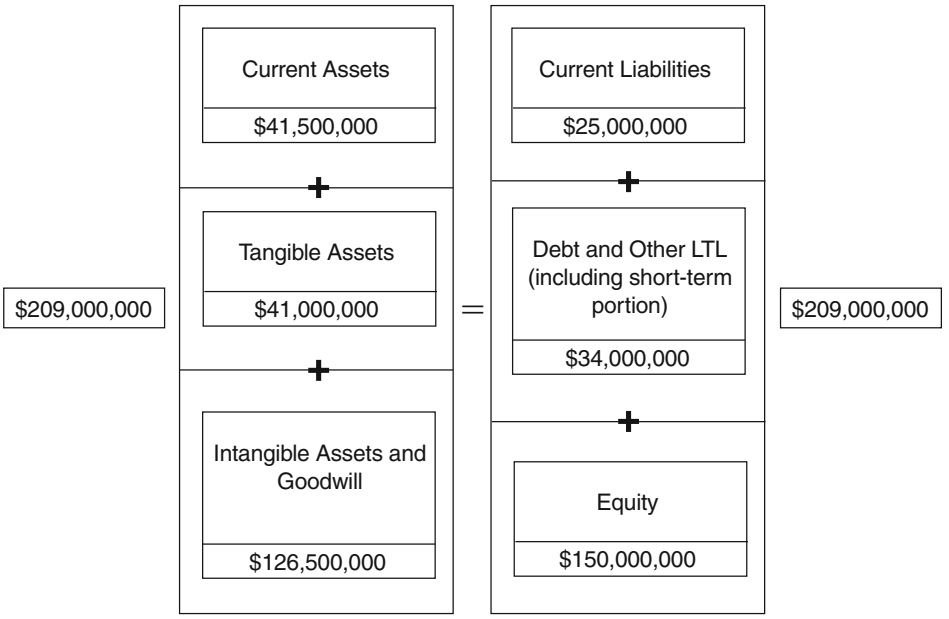
method to be used for this case study only are set forth in the following table. Keep in mind that the analyst is responsible for choosing the appropriate approach applicable and that approach may change from asset to asset and from assignment to assignment.

Asset	Type	Valuation Approach (Method)
Software	Technology-based	Cost approach (cost to recreate)
Customer relationships	Customer-related	Cost approach (cost to recreate)
Assembled workforce[82]	Goodwill	Cost approach (cost to recreate)
Noncompete agreement	Contract-based	Income approach (before and after DCF)
Technology	Technology-based	Income approach (multi-period excess earnings)
In-process research and development	Technology-based	Income approach (multi-period excess earnings)
Trade name	Marketing-related	Income approach (relief from royalties)
Goodwill	N/A	Residual

[82] SFAS No. 141 prohibits assembled workforce from recognition as an intangible asset apart from goodwill. However, the asset is valued here to provide a basis for a return in the multi-period excess earnings methodology. Its value is included in goodwill in the final analysis.

Exhibit 20.2 Box Analysis 2



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The valuation of the purchased assets of Target Company will be performed using a combination of cost and income approaches, with an element of the market approach in selecting the royalty rate used in the trade name valuation. Detailed explanations of the three approaches may be found elsewhere in this book. The multi-period excess earnings method of the income approach will be used to value technology and in-process research and development. However, the other assets must be valued first (aside from goodwill, which is valued using a residual method, where the value of all identified assets is subtracted from the total adjusted purchase price). This is because one of the inputs of the multi-period excess earnings method is a deduction representing returns or contributory charges on the fair values of the other assets employed in the business.

Remaining Useful Life Analysis

Identifiable assets must be analyzed to determine whether the asset has a finite or indefinite useful life. This subject is addressed in SFAS No. 142:

> The accounting for a recognized intangible asset is based on its useful life to the reporting entity. An intangible asset with a finite useful life is amortized; an intangible asset with an indefinite useful life is not amortized. The useful life of an intangible asset to an entity is the period over which the asset is expected to contribute directly or indirectly to the future cash flows of that entity.[83]

[83] FASB, Statement of Financial Accounting Standards No. 142, at 11.

SFAS No. 142 mentions a number of pertinent factors that should be taken into account[84]:

- Expected use of the asset
- Expected use of similar assets
- Legal, regulatory and contractual provisions that may limit the useful life or enable renewal or extension
- The effects of obsolescence, demand, competition and other economic factors
- Required future maintenance expenditures

Analysts also rely on statistically-based predictions of future behavior by developing *survivor curves* using tools such as Iowa-type Curves and the Weibull Distribution. The subject of "lifing" is very complex and beyond the scope of this chapter. There is no shortage of writings on the subject; for a start, Chapter 11 of *Valuing Intangible Assets* by Robert F. Reilly and Robert P. Schweihs (New York: McGraw-Hill, 1999) is recommended.

In the following example, it is assumed that various analyses and techniques have been performed to determine the remaining useful lives of the amortizable intangible assets, but those machinations will not be described.

Business Enterprise Analysis

Our analysis will proceed with the development of a Business Enterprise Valuation (BEV) using a discounted cash flow (DCF) methodology. Performing the BEV using a DCF requires a number of assumptions including: sales and expense forecasts, working capital requirements, and capital expenditure requirements. The nature and underlying rationale for these assumptions will be discussed throughout the chapter.

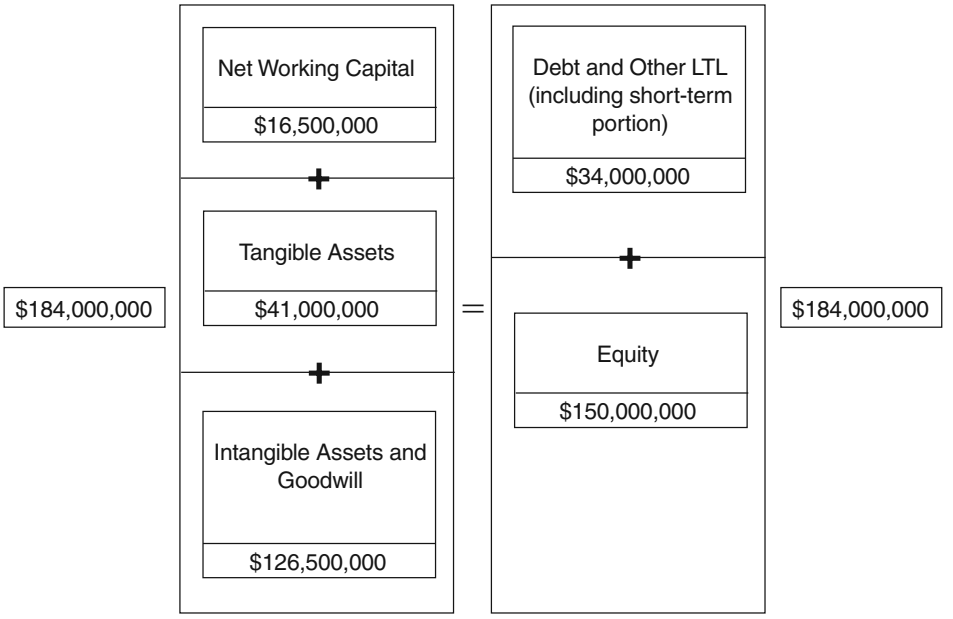
In this example, the adjusted purchase price comprises invested capital (as previously defined), plus current liabilities. The adjusted purchase price is equivalent to current assets plus tangible assets, intangible assets, and goodwill. The value of a business enterprise is equivalent to the value of the total invested capital of that business. A company's invested capital is equivalent to net working capital (determined by deducting the amount of current liabilities from current assets) plus tangible assets, intangible assets, and goodwill. Again, the box analysis is helpful (see Exhibit 20.3).

Performing a BEV and DCF are important in three major respects.

1. It requires an in-depth review of the industry and of Target Company's operations and results, both historical and forecasted.
2. It allows us to ascertain the reasonableness of the purchase price by determining whether the expected future cash flows of an enterprise will support that purchase price.
3. In performing a BEV revenue, earnings, and cash flow streams are forecast, which serve as the basis for valuing assets by the income approach.

[84] *Ibid.*

Exhibit 20.3 Box Analysis 3



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Discounted Cash Flow Approach

In the discounted cash flow method of the income approach, a pro forma analysis is made of the subject company to estimate future available cash flows. Available cash flow is the amount that could be paid out to providers of capital without impairment of business operations.

The annual forecasted available cash flows are discounted to indicate a present value. The sum of the annual present values including the present value of any estimated residual equals the capitalized earnings of the business. When performed on a debt-free basis, that is, assuming the company has no financial leverage, the business's capitalized earnings value equates to invested capital value, defined as the sum of equity value plus the value of all interest-bearing debt.

Assumptions should be prepared by the client. The analyst might guide a client to producing a meaningful forecast, but, just as historical financial statements are the responsibility of management, not the auditor, the company should take responsibility for prospective financial information (defined as a forecast of expected future cash flows, or PFI).[85] Assumptions were made on the basis of internal company PFI as presented to us. Amounts also forecast are: sales growth, product cost, operating expenses, and depreciation. As shown in Exhibit 20.4, principal assumptions utilized in developing the estimates of cash flow are:

[85] Larson et al., at 5.2.07.

- Sales are forecast to increase from $60,000,000 in 2001 to $69,000,000 in 2002, growth of 15 percent, due to conversions, upgrades, new customers, and price increases. This increase is based largely on estimated growth in one of its key markets of 20 percent. However, the growth rate of the key market is expected to decline after 2003. The 10-year compound annual growth rate is 9.96 percent.
- Cost of sales (40 percent of sales in 2002, improving to 39 percent thereafter) and operating expenses (30 percent in 2002, improving to 29 percent thereafter) excluding depreciation (tax basis—separately forecast using IRS MACRS tables) and amortization are also forecast. The PFI is in line with Target Company's historical averages and with management's expectations at the time of the acquisition, and were felt to represent the best estimate of these costs. These assumptions are also in line with growth rates and margins expected by similar products from similar companies in the marketplace.
- Working capital requirements (debt free) were forecast at 15 percent of sales, based on the company's historical working capital position, expected needs, and industry benchmarks.
- Capital expenditures are projected at 1 percent of net sales. This level of capital expenditures is considered adequate to support future level of sales.
- Tax amortization of total intangible asset value is based on Section 197 of the Internal Revenue Code which provides for such amortization over a 15-year period.[86] The amortization acts as a tax shield and is added back to cash flow. Annual amortization is $8,433,000 ($126,500,000 ÷ 15, rounded). The reader should note that this example is of an *asset* purchase. In a *stock* purchase, the intangible assets generally would not be amortizable for tax purposes.

Other Assumptions:	
Required rate of return (discount rate)*	16.00%
Residual perpetual growth rate	5.00%
Tax rate	40.00%

*Discussed more fully in the section entitled "Discount Rate."

Assumptions are summarized in Exhibit 20.4, which presents the PFI for a period of ten years.

Cash flows in year eleven are increased by the residual growth rate and then capitalized into perpetuity dividing by the capitalization rate, defined as the difference between the discount rate and the residual growth rate. This residual value was then discounted to present value to provide the net present value of the residual cash flow. The residual cash flow represents the expected cash flow for years 11 to perpetuity.

Since the Section 197 amortization has a finite amortization period of 15 years, the residual calculation must be adjusted so the amortization is not capitalized into perpetuity. First, the tax benefit of the amortization of $3,373,000 (amortization of $8,433,000 multiplied by the tax rate of 40 percent, rounded) is added back to year 11 cash flow. Thus, cash flow to be capitalized ignores any amortization benefit after year 10. Then, the present value of the remaining five years of tax amortization is

[86] IRC § 197(a) (July 1991).

Exhibit 20.4 Target Company: Business Enterprise Value—Assumptions as of December 31, 2001 ($ 000s)

	Actual	Forecast								
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1. Sales											
Sales Growth Percentage		15.0%	15.0%	12.5%	10.0%	10.0%	7.5%	7.5%	7.5%	7.5%	7.5%
Net Sales	$60,000	$69,000	$79,350	$89,269	$98,196	$108,015	$116,116	$124,825	$134,187	$144,251	$155,070
2. Expenses											
Cost of Sales	24,000	27,600	30,947	34,815	38,296	42,126	45,285	48,682	52,333	56,258	60,477
Cost of Sales Percentage	40.0%	40.0%	39.0%	39.0%	39.0%	39.0%	39.0%	39.0%	39.0%	39.0%	39.0%
Operating Expenses	$18,000	$20,700	$23,012	$25,888	$28,477	$ 31,324	$ 33,674	$ 36,199	$ 38,914	$ 41,833	$ 44,970
Operating Expenses Percentage	30.0%	30.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%
Depreciation (MACRS)	$ 1,750	$ 3,097	$ 5,171	$ 3,961	$ 3,120	$ 2,544	$ 2,649	$ 2,762	$ 2,011	$ 1,246	$ 1,551
Other Income (Expense), net	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3. Cash Flow											
Capital Expenditures		$ 690	$ 794	$893	$982	$ 1,080	$ 1,161	$ 1,248	$ 1,342	$ 1,443	$ 1,551
Capital Expenditures Percentage		1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Projected Working Capital as Percent of Sales		15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Projected Working Capital Balance (1)	$16,500	$10,350	$11,903	$13,390	$14,729	$ 16,202	$ 17,417	$ 18,724	$ 20,128	$ 21,638	$ 23,260
Projected Working Capital Requirement		(6,150)	1,553	1,488	1,339	1,473	1,215	1,306	1,404	1,510	1,623

4. Other

Effective Tax Rate	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Required Rate of Return	16.0%										

Amortization of Intangibles (Tax)

Assumption: Intangibles receive 15 year tax life per Sec. 197

Purchase Price	$150,000
Plus: Liabilities Assumed	59,000
Adjusted Purchase Price	$209,000
Less: Tangible Assets	82,500
Amortizable Intangible Assets	$126,500
Divide: Tax Life (years)	15
Annual Amortization, Rounded	$ 8,433

(1) Balance at December 31, 2001 stated at fair value.
Note: Some amounts may not foot due to rounding.

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added to the residual calculation. This amount is $2,697,000. After the adjustments, the amortization of intangibles reflects a benefit period of 15 years.

The present value of the net cash flows, plus the present value of the residual, provides the total capitalized cash flow. The BEV is presented in Exhibit 20.5.

Discount Rate

ValTip

The appropriate rate of return in valuing the enterprise is the weighted average cost of capital, the weighted average of the return on equity capital and the return on debt capital. The weights represent percentages of debt to total capital and equity to total capital. The rate of return on debt capital is adjusted to reflect the fact that interest payments are tax deductible to the corporation.

The weighted average cost of capital is expressed in the following formula:

$$WACC = K_d\,(1-t)\,(D/TC) + K_e\,(E/TC)$$

$$WACC = (k_e \times W_e) + (k_p \times W_p) + (k_{d(pt)}[1-t] \times W_d)$$

Where:

WACC	=	Weighted Average Cost of Capital
K_e	=	Cost of common equity capital
W_e	=	Percentage of common equity in the capital structure, at market value
K_p	=	Cost of preferred equity
W_p	=	Percentage of preferred equity in the capital structure, at market value
$k_{d(pt)}$	=	Cost of debt (pretax)
t	=	Tax rate
W_d	=	Percentage of debt in the capital structure, at market value[87]
TC	=	Total Capital
D	=	Debt
E	=	Equity

[87] Shannon P. Pratt, *Cost of Capital: Estimation and Applications* (New York: John Wiley & Sons, Inc., 1998), p. 46.

Exhibit 20.5 Target Company: Business Enterprise Value—Cash Flow Forecast as of December 31, 2001 ($ 000s)

	Actual	Forecast									
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Sales Growth Percentage		15.0%	15.0%	12.5%	10.0%	10.0%	7.5%	7.5%	7.5%	7.5%	7.5%
Net Sales	$ 60,000	$69,000	$79,350	$89,269	$98,196	$108,015	$116,116	$124,825	$134,187	$144,251	$155,070
Cost of Sales	24,000	27,600	30,947	34,815	38,296	42,126	45,285	48,682	52,333	56,258	60,477
Gross Profit	36,000	41,400	48,404	54,454	59,899	65,889	70,831	76,143	81,854	87,993	94,593
Operating Expenses	18,000	20,700	23,012	25,888	28,477	31,324	33,674	36,199	38,914	41,833	44,970
Depreciation (MACRS)	1,750	3,097	5,171	3,961	3,120	2,544	2,649	2,762	2,011	1,246	1,551
Amortization of Intangibles (Tax)	0	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433
Total Operating Expenses	19,750	32,230	36,615	38,282	40,030	42,302	44,756	47,395	49,358	51,512	54,955
Taxable Income	16,250	9,170	11,788	16,171	19,870	23,587	26,075	28,749	32,496	36,481	39,638
Income Taxes	6,500	3,668	4,715	6,469	7,948	9,435	10,430	11,499	12,998	14,593	15,855
Net Income	$ 9,750	$5,502	$ 7,073	$ 9,703	$11,922	$ 14,152	$ 15,645	$ 17,249	$ 19,497	$ 21,889	$ 23,783
Net Cash Flow											
Net Income		$ 5,502	$7,073	$9,703	$11,922	$14,152	$ 15,645	$ 17,249	$ 19,497	$ 21,889	$ 23,783
Capital Expenditures		(690)	(794)	(893)	(982)	(1,080)	(1,161)	(1,248)	(1,342)	(1,443)	(1,551)
Change in Working Capital		6,150	(1,553)	(1,488)	(1,339)	(1,473)	(1,215)	(1,306)	(1,404)	(1,510)	(1,623)
Depreciation		3,097	5,171	3,961	3,120	2,544	2,649	2,762	2,011	1,246	1,551
Amortization of Intangibles (Tax)		8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433
Net Cash Flow		22,492	18,331	19,717	21,154	22,577	24,351	25,890	27,195	28,616	30,594
Present Value Factor, where Discount Rate	16.0%	0.9285	0.8004	0.6900	0.5948	0.5128	0.4421	0.3811	0.3285	0.2832	0.2441
Present Value of Net Cash Flow		$ 20,883	$14,672	$13,605	$12,583	$11,577	$ 10,764	$ 9,866	$ 8,934	$ 8,104	$7,469

(continues)

Exhibit 20.5 *continued*

	Actual 2001	2002
2011 Cash Flow		$ 30,594
Less: Tax Benefit of Amortization		3,373
2011 Cash Flow, net of Benefit		$ 27,220
2012 Cash Flow, Assuming Growth of	5.0%	$28,581
Residual Capitalization Rate		11.00%
Residual Value, 2012		$259,830
Present Value Factor		0.2441
Fair Value of Residual		$ 63,436
Net Present Value of Net Cash Flow, 2002-2011		$118,459
Net Present Value of Residual Cash Flow		63,436
Present Value of Amortization Tax Benefit, 2012-2016		2,697
Total Invested Capital, Rounded		$185,000

	2012	2013	2014	2015	2016
Amortization of Intangibles (Pretax)	$ 8,433	$ 8,433	$ 8,433	$ 8,433	$ 8,433
Tax Benefit of Amortization	3,373	3,373	3,373	3,373	3,373
Present Value Factor	0.2105	0.1814	0.1564	0.1348	0.1162
Present Value of Tax Benefit	$ 710	$ 612	$ 528	$ 455	$ 392
Sum = Fair Value of Tax Benefit	$ 2,697				

Note: Some amounts may not foot due to rounding.

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The weighted average cost of capital represents the average rate of return investors require to induce them to supply all forms of long-term capital (debt and equity) to a company.

It is beyond the scope of this chapter to provide a detailed explanation of rates of return (the reader is encouraged to reference Chapter 5). Assume an equity discount rate (which in a corporate acquisition is often calculated using the Capital Asset Pricing Model) of 20 percent and a pretax cost of debt of 6.50 percent. Further, assume a capital structure of 25 percent debt and 75 percent equity. Theoretically, an "optimal" capital structure should be used to estimate a company's WACC in the case of an acquisition. Analysts typically rely on the capital structures of public companies as a proxy for "optimal." A target capital structure of approximately 25 percent debt and 75 percent equity was estimated for Target Company, based on a review of publicly traded companies. Target Company has no preferred equity. Substituting these values into the WACC formula described previously provides the following:

$$\begin{aligned} \text{WACC} &= (20.00\% \times 75.00\%) + (6.50\%[1-40.00\%] \times 25.00\%) \\ &= (15.00\%) + (3.90\% \times 25.00\%) \\ &= 15.00\% + 0.97\% \\ &= 15.97\% \end{aligned}$$

Rounded to 16%

Applying the cost of capital to cash flows estimated earlier indicates the fair value of the invested capital of the target company was $185,000,000 on the valuation date (Exhibit 20.5). Actual invested capital is $184,000,000 (cash paid plus interest-bearing debt assumed, including current maturities), so we are confident that the discounted cash flow model reasonably reflects the value of the business and that the discount rate is reasonable as well.

Valuation of Current Assets

It is very important that the valuation analyst and the auditor have open lines of communication. Certain financial and other current assets are the province of the auditor and the purchase price allocation must rely in part on audit conclusions for certain assets, such as cash and receivables. Marketable securities must be marked to market, often by simply obtaining brokerage statements. Previously recognized intangible assets that represent capitalized historic expenditures, such as organization costs, typically are written off. The actual cash flow associated with these assets occurred in the past, and these assets typically cannot be separated or sold apart from the acquired entity as required under SFAS No. 141. Any other previously recorded intangible value is subsumed in the current purchase price allocation and is to be reallocated.

Valuation of Tangible Assets

Very few valuation analysts have the experience and training to operate outside their discipline to render valuation opinions on fixed assets. If material and/or complicated, the real estate and personal property must be independently appraised. In this example, we are assuming that a real estate appraiser determined the fair value of the land and improvements to be $22,000,000 and a personal property appraiser determined the value of the machinery and equipment to be $19,000,000.

VALUATION OF INTANGIBLE ASSETS

Discount Rates

For each asset valued in the following sections a discount rate must be selected. For assets valued using the income approach, the discount rate is used to reduce future benefit streams to present value. For those assets and for assets valued using the cost approach, the discount rate is an important input for calculating the amortization benefit (see "Discount Rate" section in this chapter). That rate was employed in approximating the purchase price in the BEV and also for those assets judged to be about as risky overall as the business (trade name and noncompete agreement). Discount rates for the other intangible assets were selected based on our judgment of relative risk and approximate the rates of returns investors in the subject assets might require. For example, the IPR&D is incomplete and commercially unproven. Competitors likely are developing their own technologies which will compete. Thus, the rate of return on this asset is substantially higher than the WACC.

The rates of return on the other intangibles are similarly selected with reference to the WACC. The rates for the intangible assets are:

Software	18%
Customer base	18%
Assembled workforce	16%
Trade name	16%
Noncompete agreement	16%
Existing technology	18%
In-process research and development	25%

Software

Target Company employs a sophisticated array of computer programs to manage its product and production processes (Exhibit 20.6). All product software was developed in-house and is not commercially available. A cost approach was applied to value the software, as this asset is a supporting or contributory asset with no directly attributable revenue or income streams. However, if a revenue or income stream could be attributed to this asset and if the software had saleable commercial applications, an income approach would have been considered, as that approach is often used in the valuation of software.

The company's software system comprises 20 modules, each made up of a number of programs written in C++ programming language. To apply this form of the

cost approach, it is necessary to obtain a reliable indication of the cost to recreate the program. A line count (a management report detailing the number of lines of code per program and/or module) was obtained.

Next, it is necessary to determine the productivity with which the hypothetical recreation effort would take place. Here, management assessed a productivity rating of 1 to 3, noting that software rated 1 could be programmed at four lines of code per hour, software rated at 2 could be programmed at three lines of code per hour and software rated 3, the most complex and difficult, could be programmed at two lines of code per hour. The coding rates encompass completely debugged program statements including requirements definition, systems design, debugging and documentation, testing, and so forth. In performing this purchase price allocation, it was fortunate that management had maintained detailed records of programmer productivity and supplied us their metrics for such development activity.

By dividing the lines of code for each module by the coding rate, the number of hours to re-create was developed, totaling 112,507 hours for the entire system. The sum of hours was then multiplied by the blended hourly rate of $119 per hour.

In estimating the hourly rate, it was hypothesized that if the software were to be re-created today, a project team of 10 individuals would have to be assembled. The team would include one project manager, two systems analysts, one technical writer, four programmers and two support persons. Using their fully-burdened rates, the weighted average rate was calculated for the team at $119 per hour. These rates include employee benefits, facilities and overhead charges, and approximate the rates that would be charged by a software consulting firm.

Reproduction cost of the software system was determined by multiplying the total number of hours to recreate by the blended hourly rate. *Reproduction cost* is defined as:

> . . . the estimated cost to construct, at current prices as of the date of the analysis, an exact duplicate or replica of the subject intangible asset, using the same materials, production standards, design, layout, and quality of workmanship as the subject intangible asset. The reproduction intangible asset will include the same inadequacies, superadequacies, and obsolescence as the subject intangible asset.[88]

In this example, reproduction cost totals $13,388,333. Since reproduction cost equates to brand new software, an obsolescence factor is applied to recognize the fact that the acquired software is not brand new. Rather, it may have redundant or extraneous code and likely has been patched over the years and contains other inefficiencies that brand new software presumably would not have. For this application, after discussing the capabilities of the software with management, it was estimated that an obsolescence factor of 25 percent was warranted, reducing the reproduction cost to its *replacement cost* of $10,041,250.

Replacement cost is defined as:

> . . . the estimated cost to construct, at current prices as of the date of the analysis, an intangible asset with equivalent utility to the subject intan-

[88] Robert F. Reilly and Robert P. Schweihs, *Valuing Intangible Assets* (New York: John Wiley & Sons, Inc., 1999), p. 122.

gible, using modern materials, production standards, design, layout, and quality of workmanship. The replacement intangible asset will exclude all curable inadequacies, superadequacies, and obsolescence that are present in the subject intangible asset.[89]

Replacement cost is then adjusted for taxes to recognize the deductibility of such expenses. The after-tax value is $6,024,750.

ValTip

The formula for the amortization benefit is:

$$AB = PVCF \times (n/(n - ((PV(Dr,n, -1) \times (1 + Dr)\ ^0.5) \times T)) - 1)$$

Where:

AB	=	Amortization benefit
PVCF	=	Present value of cash flows from the asset
n	=	15 year amortization period
Dr	=	Discount rate (asset specific)
PV(Dr,n, – 1) × (1 + Dr)^0.5	=	Present value of an annuity of $1 over 15 years, at the discount rate
T	=	Tax rate

Added to the after-tax value is an amortization benefit, which reflects the additional value accruing to the asset brought about by the ability to deduct the amortization of the asset over its 15-year tax life. The amortization benefit is an element of the fair value of all intangible assets that are deductible for tax purposes.

Based on the cost approach, and after adjusting for taxes and amortization benefit, we concluded that the fair value of the software as of December 31, 2001 was $7,070,000 (rounded) (see Exhibit 20.6). The remaining useful life is four years.

Customer Base

The company sells virtually all of its products through a network of distributors and large and mid-size retail outlets. Many of these customers have done business with the company for a number of years of uninterrupted service. As part of the

[89] *Ibid.*

Exhibit 20.6 Target Company: Valuation of Acquired Software as of December 31, 2001

All software was developed internally by Company for its own use. Rights to software were transferred at acquisition.

The software is written in C++ programming language.

Valuation is based on cost to replace less obsolescence. Costs are based on internally developed Company metrics for software development productivity.

Source: Leonard Riles, Director of Product Development

In Place	Lines of Code	Productivity Rating (1)	Productivity Rate (1)	Hours To Recreate
Module 1	26,400	2	3.0	8,800
Module 2	32,600	3	2.0	16,300
Module 3	46,000	1	4.0	11,500
Module 4	8,480	3	2.0	4,240
Module 5	12,000	3	2.0	6,000
Module 6	12,500	2	3.0	4,167
Module 7	2,000	2	3.0	667
Module 8	32,000	2	3.0	10,667
Module 9	3,000	2	3.0	1,000
Module 10	3,000	2	3.0	1,000
Module 11	3,000	2	3.0	1,000
Module 12	13,000	2	3.0	4,333
Module 13	6,000	2	3.0	2,000
Module 14	10,000	2	3.0	3,333
Module 15	5,000	2	3.0	1,667
Module 16	6,000	2	3.0	2,000
Module 17	5,000	3	2.0	2,500
Module 18	8,000	1	4.0	2,000
Module 19	7,000	2	3.0	2,333
Module 20	54,000	3	2.0	27,000
Total Number of Lines	294,980			
Total Number of Hours to Recreate				112,507
Times: Blended Hourly Rate (see below)				$ 119
Reproduction Cost				$13,388,333
Less: Obsolescence(2)			25.0%	(3,347,083)
Replacement Cost				$10,041,250
Less: Taxes @			40.0%	(4,016,500)
After Tax Value Before Amortization Benefit				$ 6,024,750
Amortization Benefit				
Discount Rate			18.0%	
Tax Rate			40.0%	
Tax Amortization Period			15	
Amortization Benefit				1,042,321
Fair Value of Software, Rounded				$ 7,070,000

(1) Lines of code per hour, based on productivity assessment for average module of programming.

(2) Estimate based on number of lines of redundant/extraneous code and effective age and remaining economic lives of system.

(continues)

Exhibit 20.6 *continued*

Software Development Costs—Estimated Project Team

Function	Number	Burdened Hourly Rate
Project Manager	1	$200.00
Systems Analyst	2	150.00
Technical Writer	1	125.00
Programmer	4	115.00
Support	2	50.00
Blended Hourly Rate, Rounded		$119.00

Note: Some amounts may not foot due to rounding.

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acquisition of Target Company, the buyer acquired this customer base and avoided the cost of having to build a customer base through years of expenditures. One measure of the value of the customer base is represented by the sales and marketing costs avoided, and the cost approach was selected as the valuation approach to value this asset, as shown in Exhibit 20.7. In many cases, the valuation of a customer base is performed using a form of income approach known as the multi-period excess earnings method. This method is generally reserved for the intangibles with the most direct relationship to the revenue and cash flow streams. In this company, revenues are driven primarily by the technology, both existing and in-process, and the multi-period excess earnings method was used to value those assets.

To estimate the replacement cost of the customer base, total selling costs for the years ended December 31, 1999 to December 31, 2001 were calculated, based on internally prepared financial statements and sales department detail. In each year, the percentage of time and expenses from prospecting for new customers was determined. This percentage was applied to the company's total selling costs for each year to determine total new customer selling costs. These expenses were $123,246 in 2001; $119,938 in 2000; and $216,221 in 1999, for a total of $459,405 for the three years, during which 13 new customers were obtained. The total after-tax selling costs were $275,643 or $21,203 per customer, determined by dividing after-tax selling costs by the 13 new customers obtained during the period. Multiplying the replacement cost per new customer times the 261 customers in the acquired customer base provides a replacement cost of the customer base of $5,533,983. No obsolescence is recognized for this asset. The amortization benefit is $957,415. Thus, the fair value of the customer base as of December 31, 2001 was $6,490,000 (rounded) (see Exhibit 20.7). The remaining useful life is five years.

Exhibit 20.7 Target Company: Valuation of Customer Base as of December 31, 2001

Historical Customer Data

Year	Total Selling Costs	Percent of Revenue from New Customers	New Customer Selling Costs	Number of New Customers
2001	$ 5,010,000	2.46%	$ 123,246	4
2000	5,307,000	2.26%	119,938	5
1999	4,848,000	4.46%	216,221	4
	$15,165,000		$ 459,405	13

Calculation of Fair Value

Total Pretax Selling Costs—New Customers		$ 459,405
Less: Taxes @	40.0%	(183,762)
After Tax Selling Costs —New Customers		$ 275,643
Divide by: Number of New Customers, 1999-2001		13
Replacement Cost per New Customer		$ 21,203
Times: Number of Acquired Customers		261
Replacement Cost of Customer Base		$5,533,983
Amortization Benefit		
Discount Rate	18.0%	
Tax Rate	40.0%	
Tax Amortization Period	15	
Amortization Benefit		957,415
Fair Value of Customer Base, Rounded		$6,490,000

Note: Some amounts may not foot due to rounding.

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ValTip

Valuation of a Customer Base: Cost vs. Income

Valuation of a customer base using the cost approach requires the identification of the selling costs associated with the generation of new customers. In this example, management indicated that the split in selling costs was roughly equivalent to the revenue split between new and existing customers. Thus, the valuation is based on that split. Depending on the nature of the business, this split between new and existing customers may vary greatly. Thus, the valuation analyst will need to appropriately identify the costs associated with generating the new customers. This is probably most easily done based on an allocation of the sales team's time, such as 40 percent spent on finding new customers, 60 percent to handle existing ones. Or, there may be certain sales or marketing people or departments that are devoted entirely to servicing existing accounts, while others spend all of their time finding new ones. In such cases, the costs can be broken out on a departmental or individual level. For many smaller businesses, top executives also spend a large amount of time in the generation of new customers, so these costs must also be considered in the analysis.

Use of the cost approach also assumes that the customers and selling effort required to obtain them are all relatively equivalent. If the company has a few customers that make up the majority of its business, then the cost approach may not be as appropriate to determine the value of the customer base.

It should be noted that the income approach is often recommended for valuing a customer base. For many consumer products and "old economy" businesses, the customer relationship may have much higher value than the technology associated with the products being sold, since these products are often a commodity or near commodity that may be easily substituted with products from another vendor. The customer relationship may allow the sale of multiple products and services through the same sales channels. An income approach may be more appropriate in these cases.

ASSEMBLED WORKFORCE

The buyer of Target Company obtained an assembled and trained workforce. Considerable expenditures for recruiting, selecting, and training would be required to replace these employees with individuals of comparable skills and expertise. By acquiring fully trained personnel, the buyer avoided the expenditures associated with hiring and training equivalent personnel. The value of the assembled workforce is represented by the assemblage cost avoided. Therefore, the cost approach is the most applicable valuation approach to value this asset. Using this approach, the

costs associated with employee recruitment, selection, and training provide the measurement of value.

Recruiting costs are incurred to obtain a new employee, who may be either untrained or previously trained. The major components of recruiting costs are employment agencies, advertising, and other recruitment-related expense. In order to hire most professional-level employees in the U.S. with similar skill-sets, an employment agency may be used, which typically would charge a fee based on the starting salary. For the level of employees employed by the Company, the average recruiting cost is 27.5 percent of starting salary.

Training costs are incurred to train employees and bring them to the level of performance normally expected from an individual in a given position. The training costs of an employee reflect the amount of time inefficiently used by a new employee (inefficiency training cost) and the time inefficiently used by a training supervisor (direct training cost) during the first few months on the job. Training and supervisory costs were estimated by multiplying the fully-burdened weekly salary of the employee by the average amount of inefficiency incurred during the training period. The inefficiency estimate used here for training and supervisory costs is 33.3 percent, or 1/3 of the time. This can vary depending on the business. Interview costs are estimated based on average hours per employee class, as follows:

Class	Hours
1	5
2	10
3	20

The average fully burdened interview rate is $75.00 per hour.

The summation of the hiring and training costs results in the total cost to replace the assembled workforce which are summarized in Exhibit 20.8. Based on the cost approach, and after adjusting for taxes at 40 percent and adding the amortization benefit, the fair value of the assembled workforce is estimated to be approximately $1,790,000 (rounded) at December 31, 2001. No obsolescence is recognized for this asset.

ValTip

SFAS No. 141 specifically prohibits the recognition of assembled workforce as an intangible asset apart from goodwill.[90]

In the application of the multi-period excess earnings method, which is used to value the company's technology and in-process research and development, contributory charges are taken on the fair values of all of the contributory assets acquired in the acquisition. The value of the assembled workforce is calculated so

[90] FASB, Statement of Financial Accounting Standards No. 141, at 39.

Exhibit 20.8 Target Company: Valuation of Assembled Workforce as of December 31, 2001

No.	Job Title	Salary	20% Benefits	Total	(1) Train. Per. Cl.	(1) Train. Per. Yrs.	33.3% Cost	(2) 27.5% Recruit.	Interview & H.R.	Total
1	Member of Technical Staff	$ 90,000	$18,000	$108,000	1	0.125	$ 4,500	$24,750	$ 375	$29,625
2	Member of Technical Staff	80,250	16,050	96,300	2	0.375	12,038	22,069	750	34,857
3	Member of Technical Staff	60,000	12,000	72,000	2	0.375	9,000	16,500	750	26,250
4	Member of Technical Staff	44,953	8,991	53,944	1	0.125	2,248	12,362	375	14,985
5	Member of Operations Staff	71,641	14,328	85,969	1	0.125	3,582	19,701	375	23,658
6	Account Executive	91,170	18,234	109,404	1	0.125	4,559	25,072	375	30,006
7	Member of Technical Staff	107,888	21,578	129,466	2	0.375	16,183	29,669	750	46,602
8	Member of Technical Staff	33,244	6,649	39,893	1	0.125	1,662	9,142	375	11,179
9	Vice President	142,000	28,400	170,400	2	0.375	21,300	39,050	750	61,100
10	Member of Technical Staff	83,647	16,729	100,376	2	0.375	12,547	23,003	750	36,300
11	Member of Operations Staff	104,700	20,940	125,640	1	0.125	5,235	28,793	375	34,403
12	Chief Architect	155,500	31,100	186,600	3	0.750	46,650	42,763	1,500	90,913
13	Director of Development	135,000	27,000	162,000	2	0.375	20,250	37,125	750	58,125
14	Member of Technical Staff	77,772	15,554	93,326	2	0.375	11,666	21,387	750	33,803
15	Account Executive	94,950	18,990	113,940	1	0.125	4,748	26,111	375	31,234
16	Member of Technical Staff	81,300	16,260	97,560	1	0.125	4,065	22,358	375	26,798
17	Chief Executive Officer	250,000	50,000	300,000	1	0.125	12,500	68,750	375	81,625
18	Member Marketing Staff	99,000	19,800	118,800	1	0.125	4,950	27,225	375	32,550
19	Member of Technical Staff	82,000	16,400	98,400	2	0.375	12,300	22,550	750	35,600
20	Member of Technical Staff	57,460	11,492	68,952	1	0.125	2,873	15,802	375	19,050
21	Account Executive	106,400	21,280	127,680	2	0.375	15,960	29,260	750	45,970
22	Member of Technical Staff	107,867	21,573	129,440	2	0.375	16,180	29,663	750	46,593
23	Member of Technical Staff	110,000	22,000	132,000	3	0.750	33,000	30,250	1,500	64,750
24	Vice President of American Sales	135,000	27,000	162,000	2	0.375	20,250	37,125	750	58,125
25	Member of Technical Staff	71,892	14,378	86,270	2	0.375	10,784	19,770	750	31,304
26	Member of Technical Staff	96,343	19,269	115,612	2	0.375	14,451	26,494	750	41,695
27	Member of Technical Staff	114,500	22,900	137,400	1	0.125	5,725	31,488	375	37,588

28	Member of Technical Staff	47,028	9,406	56,434	1	0.125	2,351	12,933	375	15,659
29	Account Executive	90,660	18,132	108,792	1	0.125	4,533	24,932	375	29,840
30	Member of Technical Staff	63,329	12,666	75,995	1	0.125	3,166	17,415	375	20,956
31	Member of Operations Staff	131,000	26,200	157,200	1	0.125	6,550	36,025	375	42,950
32	Chief Financial Officer	150,000	30,000	180,000	1	0.125	7,500	41,250	375	49,125
33	Member of Technical Staff	100,210	20,042	120,252	2	0.375	15,032	27,558	750	43,340
34	Member of Technical Staff	87,372	17,474	104,846	2	0.375	13,106	24,027	750	37,883
35	Member of Technical Staff	108,000	21,600	129,600	2	0.375	16,200	29,700	750	46,650
36	Member of Technical Staff—Nonexempt	22,326	4,465	26,791	1	0.125	1,116	6,140	375	7,631
37	Member of Technical Staff	70,000	14,000	84,000	1	0.125	3,500	19,250	375	23,125
38	Director of Operations	137,000	27,400	164,400	3	0.750	41,100	37,675	1,500	80,275
39	Member of Technical Staff	94,248	18,850	113,098	2	0.375	14,137	25,918	750	40,805
40	Member of Operations Staff	71,000	14,200	85,200	1	0.125	3,550	19,525	375	23,450
41	Director of Marketing	125,000	25,000	150,000	2	0.375	18,750	34,375	750	53,875
42	Member of Technical Staff	65,000	13,000	78,000	1	0.125	3,250	17,875	375	21,500
43	Member of Technical Staff—Nonexempt	42,950	8,590	51,540	1	0.125	2,148	11,811	375	14,334
44	Member of Technical Staff	90,000	18,000	108,000	1	0.125	4,500	24,750	375	29,625
45	Member of Technical Staff	109,000	21,800	130,800	2	0.375	16,350	29,975	750	47,075
46	Member of Technical Staff	84,200	16,840	101,040	1	0.125	4,210	23,155	375	27,740
47	Member of Technical Staff	128,500	25,700	154,200	3	0.750	38,550	35,338	1,500	75,388
48	Member of Technical Staff	80,900	16,180	97,080	1	0.125	4,045	22,248	375	26,668
49	Member of Technical Staff	60,300	12,060	72,360	1	0.125	3,015	16,583	375	19,973
50	Member of Technical Staff	58,500	11,700	70,200	1	0.125	2,925	16,088	375	19,388
51	Director Release and Customer Support	116,000	23,200	139,200	2	0.375	17,400	31,900	750	50,050
52	Executive Assistant	35,000	7,000	42,000	1	0.125	1,750	9,625	375	11,750
53	Member of Technical Staff	113,400	22,680	136,080	2	0.375	17,010	31,185	750	48,945
54	Member of Technical Staff	112,041	22,408	134,449	2	0.375	16,806	30,811	750	48,367
55	Member of Operations Staff	70,000	14,000	84,000	1	0.125	3,500	19,250	375	23,125
56	Member of Technical Staff	77,000	15,400	92,400	2	0.375	11,550	21,175	750	33,475

(continues)

Exhibit 20.8 *continued*

No.	Job Title	Salary	20% Benefits	Total	(1) Train. Per. Cl.	Train. Per. Yrs.	33.3% Cost	(2) 27.5% Recruit.	Interview & H.R.	Total
57	Member of Technical Staff	107,000	21,400	128,400	3	0.750	32,100	29,425	1,500	63,025
58	Director of International Operations	150,000	30,000	180,000	1	0.125	7,500	41,250	375	49,125
59	Member of Technical Staff	110,000	22,000	132,000	2	0.375	16,500	30,250	750	47,500
60	Vice President and General Manager of FAMA	145,000	29,000	174,000	2	0.375	21,750	39,875	750	62,375
61	Account Executive	82,500	16,500	99,000	1	0.125	4,125	22,688	375	27,188
62	Account Executive	75,261	15,052	90,313	2	0.375	11,289	20,697	750	32,736
63	Member of Technical Staff	67,735	13,547	81,282	2	0.375	10,160	18,627	750	29,537
64	Member of Technical Staff	73,350	14,670	88,020	2	0.375	11,003	20,171	750	31,924
65	Member of Technical Staff	99,465	19,893	119,358	3	0.750	29,840	27,353	1,500	58,693
Total 65		$6,134,752	$1,226,950	$7,361,702			$771,073	$1,687,060	$41,625	$2,499,758

Replacement Cost of Assembled Workforce			$2,499,758
Less: Taxes	40.0%		(999,903)
Costs Avoided, Net of Tax			$1,499,855
Amortization Benefit			
Rate of Return	16.0%		
Tax Rate	40.0%		
Tax Amortization Period	15		
Amortization Benefit			285,967
Fair Value of Assembled Workforce, Rounded			$1,790,000

		Interview & H.R. Hours	Interview & H.R. Rate
(1)	Qualified ReplacementTraining Months		
	1 = < 3 months	5	$75.00
	2 = 3-6 months	10	$75.00
	3 = 6-12 months	20	$75.00
(2)	Source: Karl Malloney, Recruiter		

Note: Some amounts may not foot due to rounding.

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that a contributory charge of that asset may be taken. However, its fair value is included in goodwill in the final allocation of purchase price and is not separately represented.

TRADE NAME

For purposes of this chapter, Target Company has one valuable trade name. However, a company may have many trademarks/trade names, some with indefinite lives and some with finite lives. Depending on the purpose and scope of the valuation, each name or mark may be valued separately.

All of the Company's products and services are sold under the X trade name and each major product is identified by this trade name. Upon acquiring Target Company's assets, the buyer gained and paid for the right to use this name. The name valued in this section enjoys great recognition and prestige in Target Company's markets. The trade name X is recognized as representing the premier company in the industry. In most cases, the trade name identifies the top products available in the marketplace. The use of this trade name is considered critical to the continued success of the company and provides for a seamless and invisible ownership change by maintaining continuity in the minds of customers.

ValTip

Trade names and trademarks must be considered individually to determine their remaining useful life. Trade names and trademarks that are associated with a company name or logo (e.g., McDonald's) typically have indefinite lives. Many product trade names and trademarks also will have an indefinite life if no reasonable estimate can be made of the end of the product life (e.g., Coca-Cola). However, the valuer must be careful to find out whether there is a planned phase-out of a product and ascertain whether it can be estimated with reasonable certainty that a name will lose value or be abandoned over time. In such a case, a finite life is suggested, and, therefore, an amortization period is warranted. Remember, for tax purposes generally all intangibles are amotizable over a 15-year life.

To value the trade name, the cost approach and the market approach were both considered and then rejected as not being feasible methods of valuation. It is difficult to identify accurately all the costs related to recreating the trade name and building recognition, a factor required to use the cost approach. Trademarks and trade names rarely sell in the marketplace; thus, information required to perform a market approach is rarely available. The most comprehensive method to value the name is a variant of the income approach known as the *relief from royalty* method. The premise of this valuation methodology is the assumption that an owner/opera-

tor of a company would be compelled to pay the rightful owner of the intangible asset (e.g., a trade name) if the owner/operator did not have the legal right to utilize the subject intellectual property. Since ownership of a trade name relieves a company from making such payments (royalties), the financial performance of the company is enhanced to the extent that such royalty payments are avoided. The royalty typically is expressed as a percentage of pretax revenues.

The relief from royalty method equates the value of a trademark or trade name to the portion of the company's earnings that represents the pretax royalty that may have been paid for using the trade name. For the name valued, we have determined that a royalty rate of 4 percent is applicable, stated as a percentage of sales.

This pretax royalty rate was selected based on observed royalty rates in the market and on an analysis of the rate that the company's margins could support. We observed market data in The Financial Valuation Group's proprietary database documenting the range of royalty rates for trademarks to be 1 to 10 percent, with the average at 4 percent.

Thus, based largely on a review of publicly available data on trademark/trade name licensing transactions and a comparison of the name recognition between X and the guideline royalties, a 4 percent average royalty rate was selected to value the trade name. The BEV (shown in Exhibit 20.5) indicates that there are ample earnings to allow for this level of royalty payments and still earn a fair return on sales. Target Company could easily pay these royalties if it did not own the right to use the trade name. In management interviews and research, it was determined that the technology was primarily responsible for the company's superior profitability.

The rights to use the trade name transfer to the buyer in perpetuity, giving it an indefinite life. The fair value of the trade name is the present value of the royalties projected for the five-year period 2001 to 2006, plus the present value of the residual at the end of the five-year period, plus the amortization benefit. A 16 percent rate of return was chosen to reflect a risk assessment that the trade name was about as risky as the business overall.

Based on the analysis as presented in Exhibit 20.9, it was concluded that the fair value of the trade name as of the valuation date was $23,760,000 (rounded). This asset has an indefinite life.

NONCOMPETE AGREEMENT

Article X, paragraph 10.1 of the purchase agreement identifies a separate agreement not to compete. The purchase agreement specifies that, for a period of five years commencing at the date of the purchase transaction, the sellers will not engage in any activity that competes with Target Company. One of several accepted methodologies for the valuation of noncompete agreements is to prepare a second BEV analysis, one that assumes that the noncompete agreement is not in place. Presumably, in the absence of such an agreement, the sellers would be free to compete and take business away from Target Company and perhaps cause Target Company to spend more to defend its position, thus reducing its margins as well. The value of having the noncompete agreement, then, is the difference in the two BEVs, as shown in Exhibit 20.10.

Exhibit 20.9 Target Company: Valuation of Trade Name as of December 31, 2001 ($ 000s)

		2002	2003	2004	2005	2006
Net Sales from Business Enterprise Valuation[1]		$69,000	$79,350	$89,269	$98,196	$108,015
Pretax Relief from Royalty	4.0%	2,760	3,174	3,571	3,928	4,321
Income Tax Liability	40.0%	1,104	1,270	1,428	1,571	1,728
After-Tax Royalty		1,656	1,904	2,142	2,357	2,592
Present Value Income Factor	16.0%	0.9285	0.8004	0.6900	0.5948	0.5128
Present Value Relief from Royalty		$ 1,538	$ 1,524	$ 1,478	$ 1,402	$ 1,329
Sum of Present Value Relief from Royalty, 2002–2006			$ 7,271			
Residual Calculation: 2006 After-Tax Royalty		$ 2,592				
2007 After-Tax Royalty, Assuming Growth of	5.0%	$ 2,722				
Residual Capitalization Rate		11.0%				
Residual Value, 2007		$24,742				
Present Value Factor		0.5128				
Fair Market Value of Residual			12,687			
Present Value of Trade Name Royalty Flows			$19,959			
Amortization Benefit						
Discount Rate	16.0%					
Tax Rate	40.0%					
Tax Amortization Period	15					
Amortization Benefit			3,805			
Fair Value of Trade Name, Rounded			$23,760			

(1) Figures shown from Business Enterprise Valuation (Exhibit 20.5).

Note: Some amounts may not foot due to rounding.

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Exhibit 20.10 Target Company: Valuation of Noncompete as of December 31, 2001 ($ 000s)

Cash Flows (Without Noncompete In Place)	Actual 2001	Forecast 2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Sales Growth Percentage[1]		10.0%	10.0%	12.5%	10.0%	10.0%	7.5%	7.5%	7.5%	7.5%	7.5%
Net Sales	$60,000	$66,000	$72,600	$81,675	$89,843	$98,827	$106,239	$114,207	$122,772	$131,980	$141,879
Cost of Sales Percentage[1]	40.0%	40.0%	39.0%	39.0%	39.0%	39.0%	39.0%	39.0%	39.0%	39.0%	39.0%
Cost of Sales	$24,000	$26,400	$28,314	$31,853	$35,039	$38,542	$41,433	$44,541	$47,881	$51,472	$55,333
Gross Profit	36,000	39,600	44,286	49,822	54,804	60,284	64,806	69,666	74,891	80,508	86,546
Operating Expense Percentage[1]	30.0%	32.0%	30.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%	29.0%
Operating Expenses	$18,000	$21,120	$21,780	$23,686	$26,054	$28,660	$30,809	$33,120	$35,604	$38,274	$41,145
Depreciation (MACRS)	1,750	3,097	5,171	3,961	3,120	2,544	2,649	2,762	2,011	1,246	1,551
Amortization of Intangibles (Tax)	0	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433
Total Operating Expenses	19,750	32,650	35,384	36,080	37,607	39,637	41,891	44,315	46,048	47,953	51,129
Taxable Income	16,250	6,950	8,902	13,741	17,197	20,647	22,915	25,351	28,843	32,555	33,417
Income Taxes	6,500	2,780	3,561	5,497	6,879	8,259	9,166	10,140	11,537	13,022	14,167
Net Income	$9,750	$4,170	$5,341	$8,245	$10,318	$12,388	$13,749	$15,210	$17,306	$19,533	$21,250
Net Cash Flow											
Net Income		$4,170	$5,341	$8,245	$10,318	$12,388	$13,749	$15,210	$17,306	$19,533	$21,250
Capital Expenditures		(660)	(726)	(817)	(898)	(988)	(1,062)	(1,142)	(1,228)	(1,320)	(1,419)
Change in Working Capital		6,600	(990)	(1,361)	(1,225)	(1,348)	(1,112)	(1,195)	(1,285)	(1,381)	(1,485)
Depreciation		3,097	5,171	3,961	3,120	2,544	2,649	2,762	2,011	1,246	1,551
Amortization of Intangibles (Tax)		8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433	8,433

Net Cash Flow		21,640	17,229	18,461	19,747	21,030	22,656	24,069	25,237	26,511	28,331
Present Value Factor, where Discount Rate	16.0%	0.9285	0.8004	0.6900	0.5948	0.5128	0.4421	0.3811	0.3285	0.2832	0.2441
Present Value of Net Cash Flow		$20,092	$13,790	$12,739	$11,746	$10,784	$10,015	$9,172	$8,291	$7,508	$6,917

2011 Cash Flow		$28,331									
Less: Tax Benefit of Amortization		3,373					**2012**	**2013**	**2014**	**2015**	**2016**
2011 Cash Flow, net of Benefit		$24,958				Amortization of Intangibles (Pretax)	$8,433	$8,433	$8,433	$8,433	$8,433
2012 Cash Flow, Assuming Growth of	5.0%	$26,205									
Residual Capitalization Rate		11.00%				Tax Benefit of Amortization	3,373	3,373	3,373	3,373	3,373
						Present Value Factor	0.2105	0.1814	0.1564	0.1348	0.1162
Residual Value, 2012		$238,231									
Present Value Factor		0.2441				Present Value of Tax Benefit	$710	$612	$528	$455	$392
Fair Value of Residual		$58,163				Sum = Fair Value of Tax Benefit	$2,697				

Net Present Value of Net Cash Flow, 2002-2011	$111,055
Net Present Value of Residual Cash Flow	58,163
Present Value of Amortization Tax Benefit, 2012-2016	2,697
Total Invested Capital with Competition, Rounded	$172,000
Business Enterprise Value (Exhibit 20.5)	185,000

(continues)

Exhibit 20.10 *continued*

Cash Flows (Without Noncompete In Place)	Actual 2001	2002
Difference = Gross Value of Noncompete		$13,000
Times: Probability Factor[2]		60.0%
Probability Adjusted Value of Noncompete		$7,800
Amortization Benefit		
Discount Rate	16.0%	
Tax Rate	40.0%	
Tax Amortization Period	15	
Amortization Benefit		1,486
Fair Value of Noncompete Agreement, Rounded		$9,300

(1) Percentages based on assumption of competition. See discussion in Noncompete section of Chapter 20.
(2) To account for likehood of competing absent an agreement and likelihood of success.

Note: Some amounts may not foot due to rounding.

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In the interest of brevity and because a full BEV analysis has been presented as an example, explanations of the assumptions will not be repeated, except those assumptions that change. Under the assumption of competition, sellers could negatively impact Target Company, affecting the growth of sales (i.e., the seller, if not under a noncompete agreement theoretically could go to work for a competitor or start a new company and cause Target Company to grow slower than otherwise projected) and incur more marketing and other expenses. Thus, the changed assumptions are:

	BEV Without Competition	BEV With Competition
	Exhibit 20.5	Exhibit 20.10
Net Sales Growth Rate		
Year one	15%	10%
Year two	15%	10%
Operating Expenses		
Year one	30%	32%
Year two	29%	30%

The resulting BEV (with competition) is $172,000,000 (rounded). The value of the noncompete agreement under these assumptions is:

	Invested Capital
BEV with Agreement in place (rounded)	$185,000,000
BEV without Agreement in place (rounded)	172,000,000
Difference Equals Value of Agreement	$ 13,000,000

The gross value of the noncompete agreement calculated above represents the difference in value of the BEV without competition and the BEV with competition. Implicit in the analysis to this point is that, absent a noncompete agreement, the sellers would compete immediately with Target Company, either by joining a competitor or starting a new company, and would be successful in their effort. In fact, there is at least some probability that the sellers would not compete and a probability that even if they did, they would not be successful. Thus, the gross value of the agreement is reduced to account for these probabilities. The probability factor is somewhat judgmental and is developed by discussing the issue with the individuals under the noncompete, as well as company management. After due consideration of these issues, the probability factor was estimated to be 60 percent.

The gross value of the noncompete agreement is multiplied by the 60 percent probability factor. The result is the probability adjusted value of the noncompete agreement, $7,800,000. After adding the amortization benefit, the fair value of the noncompete agreement is $9,300,000 (rounded). The remaining useful life is five years.

Technology

The value of the company's developed technology was determined using a form of the income approach known as the multi-period excess earnings method. This method measures the present value of the future earnings to be generated during the remaining lives of the assets. Using the BEV as a starting point, pretax cash flows attributable to the technology that existed at the valuation date were calculated.

This was accomplished by utilizing management's forecast of sales attributable to the existing technology. These sales were estimated at 2001 levels plus a growth rate commensurate with inflation, or 3 percent per year. As with the BEV, deductions are made for cost of goods sold (40 percent of sales attributable to existing technology in 2002, and 39 percent after 2002) and operating expenses (20 percent of sales in 2002, then 19 percent, after deducting estimated development expenses of 10 percent from the operating expense base to reflect the fact that the developed technology should not be burdened by expenses of developing new technology). Contributory charges on the other identified assets were taken.

Returns on and of or contributory charges represent charges for the use of contributory assets employed to support the technology-based assets and help generate revenue. The cash flows from the technology-based assets must support charges for replacement of assets employed and provide a fair return to the owners of capital. The respective rates of return, while subjective, are directly related to the analyst's assessment of the risk inherent in each asset.

The following table from the IPR&D Practice Aid provides examples of assets typically treated as contributory assets, and suggested bases for determining the fair return. Generally, it is presumed that the *return* of the asset is reflected in the operating costs when applicable (e.g., depreciation expense). The contributory asset charge is the "product of the asset's fair value and the required rate of return on the asset."[91]

Asset	Basis of Charge
Working capital	Short-term lending rates for market participants (for example, working capital lines or short-term revolver rates)
Fixed assets (for example, property, plant, and equipment)	Financing rate for similar assets for market participants (for example, terms offered by vendor financing), or rates implied by operating leases, capital leases, or both (typically segregated between returns of [that is, recapture of investment] and returns on).
Workforce (which is not recognized separate from goodwill), customer lists, trademarks, and trade names	Weighted average cost of capital (WACC) for young, single-product companies (may be lower than discount rate applicable to a particular project)
Patents	WACC for young, single-product companies (may be lower than discount rate applicable to a particular project). In cases where risk of realizing economic value of patent is close to or the same as risk of realizing a project, rates would be equivalent to that of the project.

[91] Larson et al., at 5.3.64.

Asset	Basis of Charge
Other intangibles, including base (or core) technology	Rates appropriate to the risk of the subject intangible. When market evidence is available it should be used. In other cases, rates should be consistent with the relative risk of other assets in the analysis and should be higher for riskier assets.[92]

It is important to note that the assumed fair value of the contributory asset is not necessarily static over time. Working capital and tangible assets may fluctuate throughout the forecast period and returns are typically taken on estimated average balances in each year. Average balances of tangible assets subject to accelerated depreciation (as is the case here) may decline as the depreciation outstrips capital expenditures in the early years of the forecast. While the carrying value of amortizable intangible assets declines over time, there is a presumption that such assets are replenished each year so the contributory charge usually takes the form of a fixed charge each year. An exception to this rule is a noncompete agreement, which is not replenished and does not function as a supporting asset past its expiration period.

The return requirements used are after-tax and are:

Contributory Asset Charges:	
Working capital	5.0%
Land and buildings	7.0%
Machinery and equipment	8.0%
Software	18.0%
Trade name	16.0%
Noncompete agreement	16.0%
Assembled workforce	16.0%
Customer base	18.0%

Those guidelines are generally followed here, although it should be noted that some practitioners use a specific "mini-WACC" for fixed assets (the weights reflecting the percentage financed [debt] and the percentage down [equity]). Lease rates are also sometimes used.

Required returns were deducted from the cash flows. *Returns on* working capital and fixed assets are taken on the average book balances for each year in the projection period, as determined in the development of the BEV. The *return of* is satisfied through the replenishment of the asset through ongoing expenditures. Contributory charges on the intangible assets are taken on the fair value at acquisition. The returns of these assets are satisfied by that portion of operating expenses which relate to the replenishment of the various intangibles. Total returns are allocated among the intangibles valued using the multi-period excess earnings method (here, developed technology and in-process research and development), usually on the basis of relative revenues, as presented in Exhibit 20.11.

[92] *Ibid.*

Exhibit 20.11 Target Company: Valuation of Technology as of December 31, 2001 ($ 000s)—Calculation of Contributory Asset Charges

Contributory Asset	Rate	2002	2003	2004	2005	2006
A. Asset Balances						
Net Working Capital		$13,425	$11,126	$12,646	$14,060	$ 15,466
Land and Buildings		21,934	21,815	21,718	21,640	21,580
Machinery and Equipment, net		17,849	14,551	10,900	8,348	6,582
Software		7,070	7,070	7,070	7,070	7,070
Trade Name		23,760	23,760	23,760	23,760	23,760
Noncompete Agreement		9,300	9,300	9,300	9,300	9,300
Assembled Workforce		1,790	1,790	1,790	1,790	1,790
Customer Base		6,490	6,490	6,490	6,490	6,490
B. Total Returns						
Net Working Capital	5.0%	$ 671	$ 556	$ 632	$ 703	$ 773
Land and Buildings	7.0%	1,535	1,527	1,520	1,515	1,511
Machinery and Equipment, net	8.0%	1,428	1,164	872	668	527
Software	18.0%	1,273	1,273	1,273	1,273	1,273
Trade Name	16.0%	3,802	3,802	3,802	3,802	3,802
Noncompete Agreement	16.0%	1,488	1,488	1,488	1,488	1,488
Assembled Workforce	16.0%	286	286	286	286	286
Customer Base	18.0%	1,168	1,168	1,168	1,168	1,168
C. Distribution of Revenues						
Technology		$61,800	$63,654	$65,564	$67,531	$ 69,556
IPR&D		7,200	15,696	23,705	30,665	38,459
Total DCF Revenues		$69,000	$79,350	$89,269	$98,196	$108,015
Technology Percent		89.57%	80.22%	73.45%	68.77%	64.40%
IPR&D Percent		10.43%	19.78%	26.55%	31.23%	35.60%
Total		100%	100%	100%	100%	100%

D. Allocated Returns—Technology					
Net Working Capital	$ 601	$ 446	$ 464	$ 483	
Land and Buildings	1,375	1,225	1,117	1,042	
Machinery and Equipment, net	1,279	934	640	459	
Software	1,140	1,021	935	875	
Trade Name	3,405	3,050	2,792	2,614	
Noncompete Agreement	1,333	1,194	1,093	1,023	
Assembled Workforce	257	230	210	197	
Customer Base	1,046	937	858	803	
Total	$10,436	$ 9,036	$ 8,109	$ 7,498	
E. Allocated Returns—IPR&D					
Net Working Capital	$ 70	$ 110	$168	$ 220	$ 275
Land and Buildings	160	302	404	473	538
Machinery and Equipment, net	149	230	232	209	187
Software	133	252	338	397	453
Trade Name	397	752	1,010	1,187	1,354
Noncompete Agreement	155	294	395	465	530
Assembled Workforce	30	57	76	89	102
Customer Base	122	231	310	365	416
Total	$ 1,216	$ 2,228	$ 2,932	$ 3,405	$ 3,855

Note: Some amounts may not foot due to rounding.

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We then performed a study related to the expected life of the technology, which produced a four-year estimated remaining useful life, during which the asset is projected to function at 100 percent (i.e., no economic deterioration) in 2002, 90 percent in 2003, 80 percent in 2004, and 50 percent productivity in year four. Such a study may be performed in several different ways, depending on the intangible.[93] Here, the "survivor curve" was developed through detailed discussions with technical and marketing managers. It should be noted that some practitioners prefer to account for declining productivity of the asset by use of a declining revenue curve. The surviving cash flows (the excess cash flows multiplied by the projected survivorship of the technology in each year), after providing for returns on the other assets, are attributable to the technology. The discount rate of 18 percent reflects the higher relative risk of this asset compared with the business overall and the other intangibles.

Based upon our analysis, we concluded that the fair value of the acquired technology on the valuation date was $13,500,000 (rounded), as shown in Exhibit 20.12. As with the other intangible assets, the value is determined after deducting an income tax charge and adding an amortization benefit. The asset's remaining useful life is four years, but the survivor curve provides a means to record future amortization consistent with the contribution to cash flows in each year, rather than straight-line.

IN-PROCESS RESEARCH AND DEVELOPMENT

The value of the in-process research and development was also estimated using the multi-period excess earnings method (see Exhibit 20.13). Similar to our methodology for valuing the technology, the discounted cash flow model was constructed starting with expected sales based on the technology that was in-process at the valuation date. For simplicity, we are assuming that the IPR&D will be completed in early 2002 and is projected to produce sales of $7,200,000. Sales are further projected to increase rapidly in subsequent years. Similar to the technology valuation, cost of sales (40 percent of sales in 2002, 39 percent thereafter) and operating expenses (20 percent of sales [excluding any synergies] in 2002, 19 percent thereafter, net of development costs, which will no longer occur relative to this technology) are forecast, as is the cost to complete the project. The useful life of the IPR&D was estimated to be five years, during which the technology is projected to function at 100 percent for the first year, then decline in productivity to 85 percent in 2003, 75 percent in 2004, 60 percent in 2005, and 50 percent in 2006. In addition, estimated required returns on and of the assets (see previous section) were taken.

It is assumed for purposes of this example that the IPR&D is a brand-new, standalone technology not supported by the base or core technology, defined as technology that has value through its use or continued re-use within a product family.[94] If an IPR&D project is supported by a core or base technology, a contributory charge must be assessed.

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[93] For example, *Valuing Intangible Assets* by Robert F. Reilly and Robert P. Schweihs (New York: John Wiley & Sons, Inc., 1999).

[94] Larson et al., at 5.3.46.

Exhibit 20.12 Target Company: Valuation of Technology as of December 31, 2001 ($ 000s)

			Actual	Forecast			
			2001	**2002**	**2003**	**2004**	**2005**
Net Sales—Existing Technology[1]			$60,000	$61,800	$63,654	$65,564	$67,531
Cost of Sales			24,000	24,720	24,825	25,570	26,337
Gross Profit			36,000	37,080	38,829	39,994	41,194
Operating Expenses[2]			12,000	12,360	12,094	12,457	12,831
Depreciation			1,750	2,774	4,148	2,909	2,145
Total Operating Expenses			13,750	15,134	16,242	15,366	14,976
Taxable Income			22,250	21,946	22,587	24,627	26,217
Income Taxes			8,900	8,778	9,035	9,851	10,487
Net Income			$13,350	$13,168	$13,552	$14,776	$15,730
Residual Cash Flow Attributable to Technology							
Less Returns on							
16,500	Net Working Capital	5.0%		$ 601	$ 446	$ 464	$ 483
22,000	Land and Buildings	7.0%		1,375	1,225	1,117	1,042
19,000	Machinery and Equipment, net	8.0%		1,279	934	640	459
7,070	Software	18.0%		1,140	1,021	935	875
23,760	Trade Name	16.0%		3,405	3,050	2,792	2,614
9,300	Noncompete Agreement	16.0%		1,333	1,194	1,093	1,023
1,790	Assembled Workforce	16.0%		257	230	210	197
6,490	Customer Base	18.0%		1,046	937	858	803
	Sum of Returns			$10,436	$ 9,036	$ 8,109	$ 7,498
	After-Tax Residual Cash Flows			$2,732	$ 4,516	$ 6,667	$ 8,233
	Survivorship of Technology[3]			100.0%	90.0%	80.0%	50.0%
	Surviving Residual Cash Flows			$ 2,732	$ 4,064	$ 5,334	$ 4,116
18.00%	Present Value Factor for Residual Cash Flow			0.9206	0.7801	0.6611	0.5603
	Present Value of Surviving Residual Cash Flows			$ 2,515	$ 3,171	$ 3,526	$ 2,306
	Sum of Present Values, 2002–2005			$11,519			
	Amortization Benefit						
	Discount Rate	18.0%					
	Tax Rate	40.0%					
	Tax Amortization Period	15					
	Amortization Benefit			1,993			
	Fair Value of Technology, Rounded			$13,500			

(1) Based on 2001 actual sales, with growth attributable to existing technology.
(2) Excludes development expenses of 10 percent to reflect that developed technology should not be burdened by the expenses of developing new technology.
(3) Assumes 4 year life.

Note: Some amounts may not foot due to rounding.

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Exhibit 20.13 Target Company: Valuation of In-Process Research and Development as of December 31, 2001 ($000s)

			Forecast				
			2002	2003	2004	2005	2006
Net Sales—New Technology[1]			$7,200	$15,696	$23,705	$30,665	$38,459
Cost of Sales			2,880	6,121	9,245	11,959	14,999
Gross Profit			4,320	9,575	14,460	18,706	23,460
Operating Expenses[2]			1,440	2,982	4,504	5,826	7,307
Cost to Complete			300	0	0	0	0
Depreciation			323	1,023	1,052	974	906
Total Operating Expenses			2,063	4,005	5,556	6,801	8,213
Taxable Income			2,257	5,570	8,904	11,905	15,247
Income Taxes			903	2,228	3,562	4,762	6,099
Net Income			$1,354	$ 3,342	$ 5,343	$ 7,143	$ 9,148
Residual Cash Flow Attributable to Technology							
Less Returns on							
16,500	Net Working Capital	5.0%	$ 70	$ 110	$ 168	$ 220	$ 275
22,000	Land and Buildings	7.0%	160	302	404	473	538
19,000	Machinery and Equip. net	8.0%	149	230	232	209	187
7,070	Software	18.0%	133	252	338	397	453
23,760	Trade Name	16.0%	397	752	1,010	1,187	1,354
9,300	Noncompete Agreement	16.0%	155	294	395	465	530
1,790	Assembled Workforce	16.0%	30	57	76	89	102
6,490	Customer Base	18.0%	122	231	310	365	416
	Sum of Returns		$1,216	$ 2,228	$ 2,932	$ 3,405	$ 3,855
	After-Tax Residual Cash Flows		$ 138	$ 1,114	$ 2,411	$ 3,738	$ 5,293
	Survivorship of Technology[3]		100.0%	85.0%	75.0%	60.0%	50.0%
	Surviving Residual Cash Flows		$ 138	$ 947	$ 1,808	$ 2,243	$ 2,647
25.0%	Present Value Factor for Residual Cash Flow		0.8944	0.7155	0.5724	0.4579	0.3664
	Present Value of Surviving Residual Cash Flows		$ 124	$ 677	$ 1,035	$ 1,027	$ 970
	Sum of Present Values, 2002–2005		$3,833				
	Amortization Benefit						
	Discount Rate	25.0%					
	Tax Rate	40.0%					
	Tax Amortization Period	15					
	Amortization Benefit		498				
	Fair Value of Technology, Rounded		$4,330				

Exhibit 20.13 *continued*

(1) Based on Business Enterprise Value (Exhibit 20.5), less sales due to existing Technology (Exhibit 20.12).
(2) Excludes development expenses of 10 percent to reflect no future development costs relative to this technology.
(3) Assumes 5 year life.

Note: Some amounts may not foot due to rounding.

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The sum of the present values is $3,833,000. A discount rate of 25 percent was selected to reflect the additional risk of the unproven technology.[95] After accounting for the amortization benefit, it was concluded that the fair value of the IPR&D as of December 31, 2001 was $4,330,000 (Exhibit 20.13). This asset's estimated remaining useful life is five years, but, as with existing technology, the survivor curve provides a means to record future amortization consistent with the contribution to cash flows in each year.

VALUATION OF GOODWILL

ValTip

In the valuation of a successful business enterprise, there are often intangible assets that cannot be identified separately. These intangible assets are generally referred to as goodwill. The term *goodwill*, however sometimes is used to describe the aggregate of all of the intangible assets of a business. In a more restricted sense, goodwill is the sum total of only the imponderable qualities that attract future new customers to the business.

In the final analysis, goodwill equates with the residual intangible asset that generates earnings in excess of a normal return on all of the other tangible and intangible assets. The present value of future cash flows contributing to goodwill at the time of acquisition can be calculated by summing the future excess earnings, then discounting to present value. Assuming all of the tangible and intangible assets have been identified and valued at the acquisition date, this process is simplified by use of the residual method. Under the residual method, the present value of the future excess earnings, or goodwill, is calculated by subtracting from the adjusted purchase price the fair value of all the identified tangible and intangible assets. The

[95] In this model, the cost to complete is forecast as an additional expense that bears the risk of the asset overall. Some practitioners believe the cost to complete is a known expenditure that should be discounted at a lower rate, perhaps even a risk-free rate.

Exhibit 20.14 Target Company: Valuation of Goodwill as of December 31, 2001 ($000s)

Cash and Acquisition Costs		$150,000
Debt-Free Current Liabilities		25,000
Current Maturities of Long-Term Debt		4,000
Long-Term Debt		30,000
Adjusted Purchase Price		209,000
Less:	Fair Value of Current Assets	(41,500)
Less:	Fair Value of Tangible Assets	(41,000)
Less:	Fair Value of Intangible Assets	
	Software	(7,070)
	Customer Base	(6,490)
	Trade Name	(23,760)
	Noncompete Agreement	(9,300)
	Technology	(13,500)
	In-Process Research and Development	(4,330)
Residual Goodwill		$ 62,050

Note: Some amounts may not foot due to rounding.

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remainder or residual amount equates with goodwill. Keep in mind, goodwill includes assembled workforce, but assembled workforce was valued separately to obtain a contributory return for IPR&D and technology. As a result and pursuant to SFAS No. 141, the indicated value of assembled workforce must be added to the indicated value of goodwill to arrive at the fair value of goodwill for financial statement reporting purposes.[96]

For financial reporting purposes, included in the goodwill value is the fair value of the assembled workforce of $1,790,000. Based on this analysis, the fair value of Goodwill on December 31, 2001, was $62,050,000 (Exhibit 20.14).

ALLOCATION OF PURCHASE PRICE

The summary allocation of values is presented in Exhibit 20.15. In this exhibit, the valuation conclusions are separated into three groups: total current and tangible assets, total intangible assets, and goodwill. Individual asset valuations are presented within each group.

In addition to presenting the summary of values, this schedule provides a general sanity check in the form of a weighted return calculation. The weighted return calculation employs the rate of return for each asset weighted according to its fair value relative to the whole. The weighted return can equal or approximate the over-

[96] FASB, Statement of Financial Accounting Standards No. 141, at B169.

Exhibit 20.15 Target Company: Valuation Summary as of December 31, 2001 ($000s)

Asset Name	Fair Market Value	Return	Percent To Purchase Price	Weighted Return
Cash	$ 1,500	5.00%	0.7%	0.04%
Investments in Marketable Securities	8,000	5.00%	3.8%	0.19%
Accounts Receivable	17,000	5.00%	8.1%	0.41%
Inventory	12,000	5.00%	5.7%	0.29%
Prepaid Expenses	3,000	5.00%	1.4%	0.07%
Land and Buildings	22,000	7.00%	10.5%	0.74%
Machinery and Equipment, net	19,000	8.00%	9.1%	0.73%
Total Current and Tangible Assets	$ 82,500			
Software	$7,070	18.00%	3.4%	0.61%
Technology	13,500	18.00%	6.5%	1.16%
In-Process Research and Development	4,330	25.00%	2.1%	0.52%
Trade Name	23,760	16.00%	11.4%	1.82%
Customer Base	6,490	18.00%	3.1%	0.56%
Assembled Workforce	1,790	16.00%	0.9%	0.14%
Noncompete Agreement	9,300	16.00%	4.4%	0.71%
Total Intangible Assets	$ 66,240			
Goodwill (excluding assembled workforce)	$ 60,260	28.00%	28.8%	8.07%
Total Assets	$209,000			16.05%

Note: For financial reporting purposes, the fair value of goodwill includes the fair value of assembled workforce for a total fair value of residual goodwill of $62,050.000.
Some amounts may not foot due to rounding.

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all weighted average cost of capital for the business, although the rates may not exactly be equal because the WACC equates to the business's invested capital (here, $184,000,000) while the weighted return calculation represents total asset value ($209,000,000).

The returns for each asset are those actually used in the forgoing valuation methodology, that is, for tangible assets and contributory intangible assets. For contributory intangible assets that were valued using a form of the income approach (trade name and noncompete agreement), the return is equal to the discount rate used to value that asset. Finally, the return for the assets valued under the multiperiod excess earnings approach is also their discount rate.

It should be clear that the one asset for which we do not have a return is goodwill and, admittedly, the return assigned is determined by trial and error. The goodwill return is imputed based on the overall weighted return needed to equal the weighted average cost of capital.

By its nature, goodwill is the riskiest asset of the group and therefore should require a higher return than the overall business return.

If a goodwill return of, say, 10 percent is required to achieve a weighted return of approximately 16 percent, this signals a problem and the analyst will have to go back and review and revise his or her work—something is wrong! In this calculation, the goodwill return of 28 percent suggests that goodwill is substantially riskier than all of the other assets but, at a return of 28 percent, still well within reason for a proven going concern. Thus, the returns chosen for each asset are reasonable.

APPENDIX — INTELLECTUAL PROPERTY

One of the major difficulties in valuing intellectual property is determining value in the context of licensor/licensee negotiations. All too often this context is assumed or simplified, resulting in market royalty rates being applied out of context. Most valuation analysts traditionally develop royalty rates from any of three traditional sources:

1. Negotiated licensing agreements
2. Surveys performed by various professionals, generally in cooperation with trade associations
3. Judicial opinions which vary greatly depending on individual fact patterns

These traditional tools can now be augmented by databases of licensing agreements extracted from publicly available sources. Such direct market data is some of the most compelling evidence available to determine the appropriate royalty rate in a valuation.

The market comparison-transaction method approach initially has four steps to derive an overall value estimate:

1. research the appropriate market for comparable intellectual property transactions;
2. verify the information by confirming that the market data obtained is factually accurate and that the license exchange transactions reflect arm's length market considerations;
3. compare and apply the guideline license transactions' financial and operational aspects with the subject intellectual property; and
4. reconcile the various value indications into a single value indication or range of values.

Empirical Research and Verification of Royalty Rates

Proprietary research of intangible assets and intellectual properties is important in business valuation. The value the market perceives in intellectual property-intensive companies is associated with their intangible assets and intellectual properties. Valuation of such companies is often an exercise in intangible asset valuation methods rather than traditional business valuation methods. Emphasis should be placed on proprietary studies (industry research, industry pricing metrics, and comparable intellectual property transactions). Research and verification of comparable data can be a time-consuming process. Recently, advances in information technology and the availability of online public records have made research of intellectual property transactions a realistic endeavor.

Databases that gather and organize comparative intellectual property transactions are rapidly becoming the tool of the future to those analysts who specialize in intellectual property valuation. At the time of publication, three Internet sites provide information for a fee:

1. RoyaltySource (*www.royaltysource.com*)
2. Consor® (*www.consor.com*)
3. The Financial Valuation Group (*www.fvginternational.com*)

Comparing and Applying the Data

Intellectual property transactions should be compared to the subject company using the following guidelines:

- The specific legal rights of intellectual property ownership conveyed in the guideline transaction
- The existence of any special financing terms or other arrangements
- Whether the elements of arm's length existed for the sale or license conditions
- The economic conditions that existed in the appropriate secondary market at the time of the sale or license transaction
- The industry in which the guideline intellectual property was or will be used
- The financial and operational characteristics of the guideline properties, compared with the company's intellectual property

Reconciliation

The last phase of the market approach valuation analysis is the reconciliation. The strengths and weaknesses of each comparable transaction are considered; the reliability and appropriateness of the market data are examined, including the analytical techniques applied. After considerable review, transactions selected should be reasonably comparative to the company transaction and then synthesized into a reasonable range.

Detailed Example of an Intellectual Property Database

The intellectual property transactions database of The Financial Valuation Group is based on publicly available data. It includes approximately 40 fields comprised of the names of the licensor and licensee, both the Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) numbers for the licensor and the licensee, the type of agreement (i.e., trademark, patent, copyright), the industry name, the remuneration structure, royalty percentages (base rate, the low end and high end of variable rates), royalty dollars (base flat fee, annual and variable fees), a description of the product or service, and so on. Custom searches of the database (using keywords, SIC/NAICS numbers, or both) can be performed to obtain market comparables.

Searches of "all transactions" in The Financial Valuation Group database at the publication date revealed:

Transactions by Industry

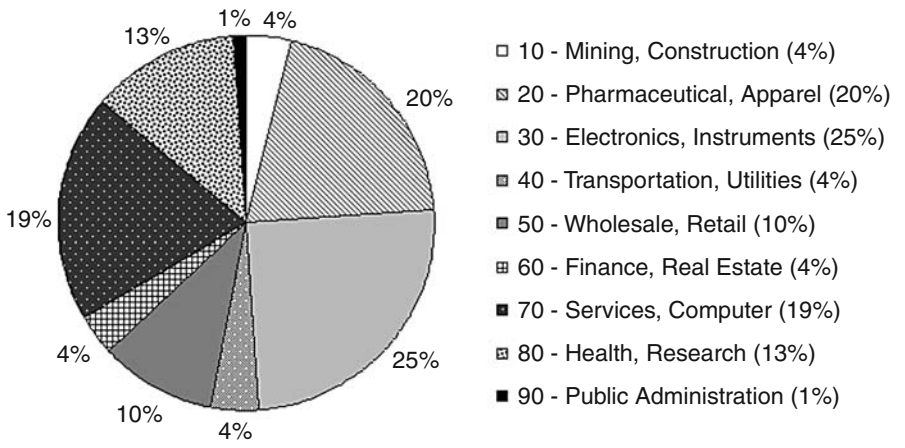
Industry groups as represented by the first two digits of the U.S. government SIC codes are represented in transactions in the database as shown in Exhibit 20.16.

Intellectual Property Typically Licensed

While there are approximately 90 distinctly different intangible assets, the majority of assets licensed are intellectual property assets which can be grouped within categories as shown in Exhibit 20.17.

Patents tend to be the most-licensed intellectual property, with trademarks, products, and technology following respectively.

Exhibit 20.16 Intellectual Property Transaction Database—Transactions by Two-Digit SIC Industry



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Payment Structures of Intellectual Property Transactions

A comparison of the royalty payment structures disclosed in each transaction reveals that approximately half of the licensing agreements are based on a set percentage or set dollar amount. There are many transactions that involve high/low payments, which are usually based on performance, sales, or both. Annual Fee and Monthly Fee agreements tend to be set at a fixed amount paid on a regular basis throughout the life of the agreement. Exhibit 20.18 shows the various royalty rate payment structures by the reported transactions analyzed.

Reasons to Use the Database

The database is used to support:

- Damages in an intellectual property litigation case
- Reasonable royalty percentage rates
- Accurate valuation conclusions
- Rebuttal of unreasonable value estimates put forth by others
- Transfer pricing opinions

Because royalty rates derived from transactions take so many economic structures, it is difficult to interpret them in a manner that is useful for a particular need. Analysis of licensing transactions similar to a particular fact situation would be necessary to determine a market royalty rate applicable to that situation. The analyst with requisite skill, education, and experience will be able to draw upon the data to form better-founded and defensible conclusions and opinions.

Exhibit 20.17 Database Percentages for Intellectual Property Types

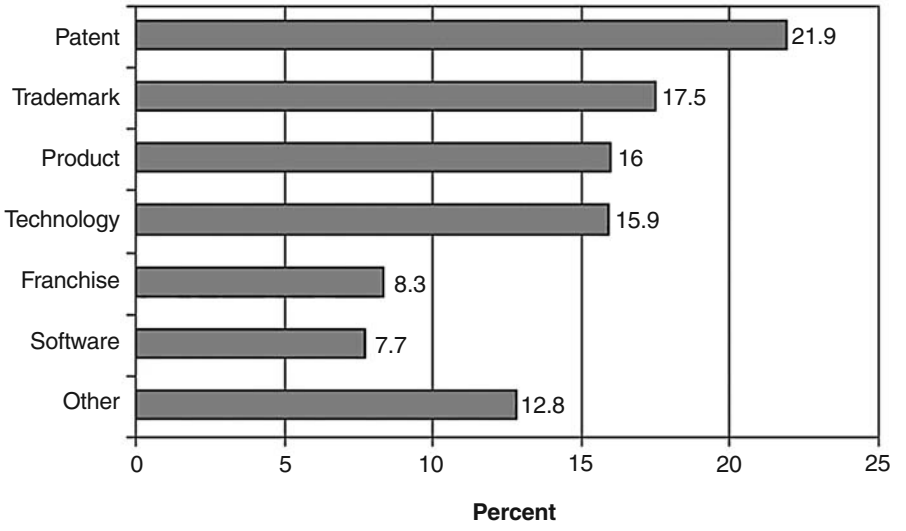

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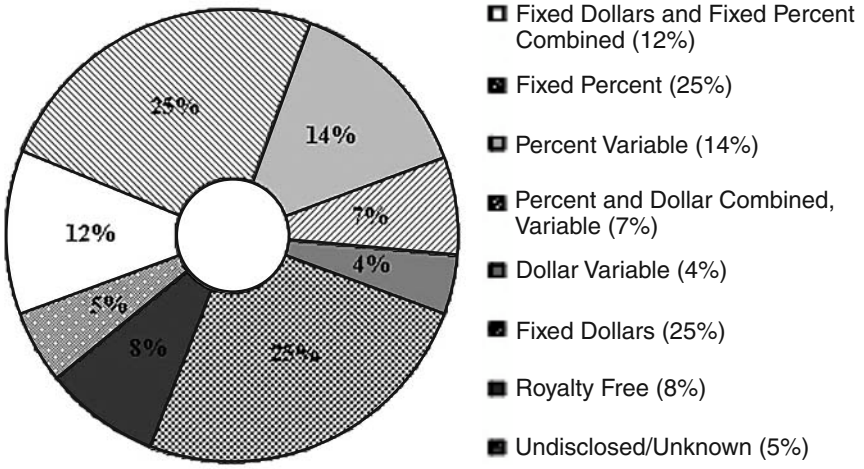
Exhibit 20.18 Payment Structures of Database Transactions



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CHAPTER 21

Marketing, Managing, and Making Money in a Valuation Services Group

PURPOSE AND OVERVIEW

In addition to providing intellectually challenging work projects with almost endless variety, the field of business valuation offers potential for outstanding compensation. However, it is possible to win an engagement and provide quality client service but fail to bill and collect a fair fee and/or incur sizable cost overruns due to poor practice management. Optimizing the potential of a business valuation practice is not accidental, nor is it the natural result of merely "doing good work." It involves developing a strong skill set in nontechnical areas such as marketing and practice management.

For the purposes of this chapter, the term "good economics" will be used to indicate a business valuation practice that has optimized its potential, given such practice characteristics as the types of clients, the geographic market served, type of services offered, staff size and quality, and age of the practice. This chapter explores the key determinants of good economics for a given business valuation practice, summarized as:

- The qualifications of the practice professionals to provide the particular services offered by the firm
- The existence of niche valuation services that the firm can serve profitably
- The temperament suitability of the practitioners, especially the leadership, for the type of engagements undertaken
- The practice's acceptance criteria for engagements and its adherence to these criteria
- The management/operating practices of the firm

When the three Ms—marketing, managing and money—are all properly synchronized, business valuation in a professional services firm can be a rewarding career.

It is important to note that these very broad and informal engagement and practice guidelines outline suggested goals that may not be achievable depending on the nature and type of practice. They are also more applicable to a group practice.

WHAT GOOD ECONOMICS LOOKS LIKE

Record Maintenance and Analysis

To attain good economics, a practice should set realistic goals for operational results and analyze unfavorable variances to determine the changes that should be made to

achieve specified goals. Management should keep complete and timely records of key practice results and analyze the results against previous periods and against budgets and goals.

ValTip

Some practices whose revenues are based primarily on fixed fees make the mistake of failing to maintain or to evaluate time records and other information about efficiency and profitability that would indicate problem areas that need corrective action.

Higher Billing Rates

Until a practice's reputation is established in the marketplace, it may not be able to command top fees. However, practices should attempt to exit a market or type of service that will not allow for higher rates over time, unless there are compelling reasons to remain in that market or offer that service, such as a high volume of engagements, to gain experience or because of the type of marketplace.

Realization and Productivity

If the practice's rate structure (hourly or fixed fees) is appropriate for its skill sets and marketplace, and engagements are managed for top efficiency, then the realization percentage should be more than 90 percent.

ValTip

It is desirable that chargeable hours for engagements should, on average, result in billings equal to 90 percent or more of the recorded hours.

Most practices count standard hours as 2,000 or 2,080 a year, or the number of hours a part-time professional is available. Obviously, to attain a healthy average, the less experienced people should be 90 percent or more productive and the professionals with leadership and sales responsibilities should be less productive. Unless the practice fields a large team, say more than 8 people, then the practice leader(s) should be productive for 40 to 50 percent of standard hours, since the practice's highest billing rates are charged by its leadership and leadership is involved in marketing and other critical, nonbillable work.

ValTip

On average, a group practice should be charging billable hours to engagements for more than 70 percent of the standard hours available for them to work.

Few Uncollectible Accounts

Bad debts and postengagement fee adjustments are unavoidable. Many practitioners view them as a cost of doing business. With appropriate engagement acceptance processes, including collecting significant retainers that are held as deposits, and close engagement management, uncollectible receivables can be minimized. Since uncollectible accounts and billing adjustments occur on a client-by-client basis, there does not seem to be a minimum or "acceptable" range for which to strive.

Profit Margin Greater Than 40 percent

Before any compensation charges for the practice leaders, but after all other expenses, the profit margin of the practice can be at least 40 percent. A well-managed and efficient, highly productive practice can maintain a 50 percent or more profit margin. Obviously this has a lot to do with the type of services offered and the percentage of fixed fee competitive work.

Right Fit

Practices often start their life taking whatever type of valuation services they can get, or whatever the leader is accustomed to performing or comfortable delivering. Over time practices may evolve to other lines of services and may become entrenched in one or more specific service niches. To attain good economics, the practice leader(s) and key senior professionals must become highly qualified in a particular service line and be temperamentally well suited for the requirements of the service. For example, not everyone is comfortable with or interested in the requirements of dispute resolution work.

ValTip

In spite of the higher profits offered by litigation services, some practitioners find that being an expert witness is disruptive to the processes needed to direct a practice that must deliver valuation reports on a regular basis.

Each practice should frequently evaluate the services it offers and consider these questions for possible action:

- Which services are more profitable than the others and should be encouraged, and which ones are below the acceptable range of profitability?
- Which services are susceptible to the practice adjusting its pricing and operational approaches to attain more profitability?
- Which lines of valuation services really suit the skill sets, the temperaments, and career goals of the practice team and its leader(s)?

OPERATIONAL KEYS FOR GOOD ECONOMICS

Certain key attitudes and habitual actions in operating a business valuation practice are important to the attainment of good economics.

Bias toward Proactivity

Successful and profitable engagements do not result from sitting back and waiting for information to come from clients, third parties, or the practice engagement team. Practice leaders can establish a tight, clearly documented schedule for each engagement and anticipate in advance changes in client needs or the ability of the practice to deliver that schedule. Close monitoring and communication with the engagement team and, for some matters, with the client must be a key component of each engagement. This is particularly applicable to litigation services engagements because of the many stops, starts, and long delays involved and because most of the engagement direction and delivery dates are determined by third parties, such as the client's attorney.

Since a business valuation engagement is a consulting project, proactive planning and control is key to maximization of the efficiency, quality, and profitability of the work process and product.

Bias toward Continual Marketing Activities and Sales Results

Since the profitability of a professional practice is dependent on a high level of productivity, there must be an order input rate that consistently is greater than the output rate. In other words, the practice cannot run out of work for any significant period of time. Some fortunate practices have a steady supply of work, but even those fortunate ones recognize that maintaining ongoing activities is a critical factor for future sales. When practice rainmakers are busy with client work, marketing often takes a backseat. Good economics require marketing and sales results to be fairly constant to maintain an order input rate greater than output rate. In some

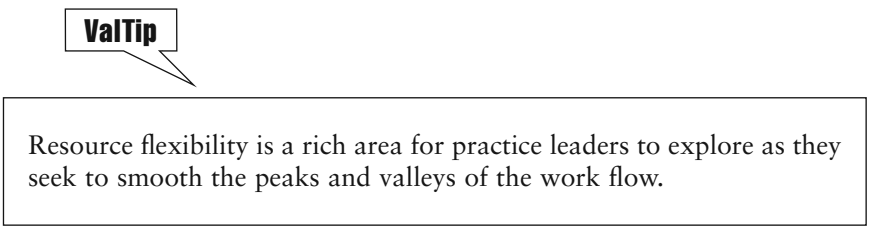
practices, that may require the leader to hire a seasoned or more experienced professional. Doing this will free up time to market and sell.

Bias toward Planning and Communication

Certified Public Accountants are familiar with the General Standard of the American Institute of Certified Public Accountants that work is to be planned and adequately supervised. This standard not only promotes the delivery of quality professional service, but is also key to superior profits. The profitable practitioner must develop a bias for continuous and timely planning for engagements and other aspects of the practice, and for communication of those plans to other professionals in the practice.

Bias toward Flexible Resources, Especially Staffing

In spite of the best marketing activities and planning for engagements, fluctuations in the work flow will occur. These range from having too little work available to keep the present staff busy to having more work than the staff can accomplish on time. Therefore, the practice must strive for resource flexibility, especially its most costly resource, the professional staff.



Any practice that operates in a competitive marketplace can form alliances with other practices to share staff during slow times and can cultivate part-time professionals to pick up the slack during times of high activity.

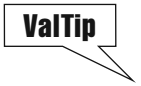
Another smoothing methodology is to parcel out segments of an engagement for various professionals to perform. For instance, one person performs the economic and industry research while another performs the valuation approaches for the same subject company. Some practices, particularly those that produce a significant volume of reports, believe this method promotes quality and efficiency. In addition, some professional staff prefer to perform one part of an engagement rather than another, and these preferences also can result in superior quality and efficiency.

Resource flexibility calls for a practice to look ahead to the nonhuman resources that it may need and planning for economical ways to attain those resources quickly. These resources include new databases, software, and other time-saving and quality-enhancing resources.

Bias toward Quality Results and Client Value

If a practice unit does not have a culture of providing quality results and client value in its engagements, then the work product may not meet client expectations, may

result in unpaid rework or reduction in fees, and could damage the practice's reputation.



Unless the practice has a bias toward quality and client value, there is less chance for good economics, at least for any sustained period of time.

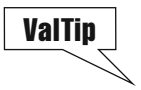
An often overlooked element of quality results and client value is the opportunity to collaborate with other qualified business analysts on some aspects of a particular engagement. The input of other qualified professionals can enhance the quality of the information utilized, the methods selected and implemented, and the professional judgments used throughout the valuation.

Bias toward Training and Quality Improvement

All business valuation practitioners are "practicing" their craft and seek, like other professions, to constantly improve their performance. A practice aspiring to good economics must invest in regular training and improvement of its staff's and leadership's abilities to provide quality services.

KEY ENGAGEMENT PRINCIPLES

An organized and disciplined approach is required for engagements with several team members to coordinate the tasks required for the completion of the project.



Litigation services engagements in particular need an organized and disciplined approach because so often the engagement criteria identified at the start are augmented and revised over the life of the project.

Practices that aspire to good economics are advised to develop their own uniform but flexible processes for engagement organization and control. These processes can take the form of checklists, reporting deadlines, schedules for client communication, team meetings, and other means to promote disciplined engagement activities.

Practices should consider developing written "guidelines" for appropriate engagement processes and procedures that also allow flexibility for the particular

needs of an engagement that are resolved by professional judgment. A "guideline approach" to engagement organization and control would address suggested procedures for these areas:

- Engagement acceptance process
- Terms and objectives of the engagement approach, resources, work plan, budget, fees and collections
- Engagement control
- Achievement of quality and client value
- Litigation services engagements

ENGAGEMENT ACCEPTANCE PROCESS

Guidelines that assist professionals in the engagement acceptance process can prevent the acceptance of an unprofitable engagement as well as properly establish the requirements and environment for a profitable engagement.

Profile of Acceptable Engagements

An important element of the written guidelines for the acceptance process is a profile of acceptable clients and engagement types for the practice or, in the alternative, a profile of unacceptable engagements. For example, a practice may not be willing to accept engagements for valuations for marital dissolution or for employee stock ownership plans.

The profile should be well known and adhered to with discipline unless the practice leader makes an exception. Discipline is particularly important when the practice has a low backlog of work, for it is easy to rationalize that "any work is better than no work." The fallacy of this rationalization is that any given engagement can result in the loss of time that could be used more profitably for marketing, training or vacation, or performing an engagement later that is more profitable.

ValTip

A practice may not want to accept engagements for individuals (as opposed to companies) as clients without receiving substantial retainers.

Questionable Opportunities

The acceptance process should include consideration of the ability of the practice to obtain needed resources to perform the engagement and other matters that would qualify the unit to accept a given opportunity. Sometimes the best engagement of the year is the one that was declined and/or referred to another firm.

Guidelines for acceptance should include procedures to identify the characteristics of a potential client that contribute to a profitable engagement. This includes the willingness of the client to assist in the engagement and to agree on a reasonable delivery schedule. An important client characteristic to search for in the acceptance process is whether the client is both willing and able to pay for the anticipated services.

Relationship Checking Process

The firm also may want to construct a database of prior relationships with potential clients and third parties. The database can be used to research the desirability of the potential client prior to accepting an engagement. Such a database also can be used to determine if relationships with opposing clients or attorneys exist. Such a database should be kept current.

Client Expectations

The acceptance process should include communications with the client representative before work begins to explain how the engagement process works and what the terms of the engagement will be for such matters as fees and payment, client assistance, and deliverables. To maximize the opportunity for good economics, clients should know at the outset the expectations for their role and all of the anticipated economics and contractual terms of the engagement.

FEES, RETAINERS, BILLING, AND COLLECTION

Engagement guidelines will include procedures for setting fees, retainers, and client billings and collections. These items should be discussed in detail during the acceptance process with the potential client. The decisions as to whether to accept the engagement and how to structure the terms of the engagement must take note of any balking by the potential client about the practice's guidelines.

Determining the Fee Schedule

Hourly rates charged and fixed fee minimums should be fair for the market and the qualifications of the practice and fit the risk and complexity of the engagement. This can mean different rates and fees for different engagements. The practice should monitor rates of its competitors frequently. Given its own portfolio of services and clients, it should examine rate schedules periodically to adjust to market rates, costs of the practice, and changing trends in the industry. On a given engagement, the rate schedule should not be an issue with the client, although the overall fee may be an issue regardless of the rates.

Retainers—By All Means

The firm should strive to obtain a retainer in advance of starting work on each engagement, often held as a deposit until final bills are paid. Retainers are collected to insure against future or unknown problems beyond the control of the analyst. The amount received should cover a reasonable portion of the total engagement and, depending on the size of the engagement and the type of client, may be 50 per-

cent or more of anticipated fees. It is not usually wise to start working on an engagement until the retainer is received. There are obviously exceptions to this rule, such as working with known clients or attorneys who have good reputations regarding payment of fees.

Retainers also serve as a client qualification tool. Beware of the potential client, particularly the new client who refuses to pay a retainer, or who wants to heavily reduce the requested retainer or continues to decline to remit the agreed-upon retainer. These are warning signals of a potential client who is not willing to pay fees and are a precursor to future fee problems. These traits can be included in the profile for unacceptable engagements.

In most situations, if you are good enough to be engaged, you are good enough to be paid a portion of the fee in advance.

Work Plans and Budgets

A sensible approach to engagement planning and control and to engagement economics is to prepare a work plan and budget for some engagements. In some instances, it is desirable to obtain approval from the client and client's attorney for the work plan and budget.

The budget may need to be revised during the course of the engagement. For this reason, it is important to discuss with the client as soon as possible why additional work must be done and to arrange a fee increase. Clients are usually understanding about fair compensation for needed changes but do not want to be surprised about an increase in fees.

Work plans and budgets, where appropriate, can be valuable tools that aid in the supervision and control of the engagement team, and can be critical in obtaining efficiency on the job.

Prompt and Frequent Billings

Guidelines should include procedures for prompt and frequent billings on engagements. Analysts should explain to clients during the engagement acceptance process how billings work, and what expectations are for prompt payment. Include specific payment terms in the engagement letter, including the provision that valuation

reports will not be issued, nor will expert witness reports be issued or testimony in deposition or trial be provided, unless outstanding bills are paid. Develop a process for fixed fee engagements that results in bills being accepted and paid at fixed intervals of time or engagement performance.

Collecting Fees

Monitor compliance with payment schedules and follow up as necessary with calls to the client decision maker. Slow payment of billings may indicate an unspoken problem with the engagement, so troubleshoot all laggards. Send reminder notices of unpaid accounts on a regular basis.

ENGAGEMENT CONTROL

Becoming more efficient and increasing the practice's realization are functions of exercising engagement control. Part of this control involves managing client expectations and setting timetables, but most of it lies primarily with the ability of the engagement leader(s) to be knowledgeable of the engagement details and to make critical judgments and take prompt corrective action. Unless the leader knows what is going on, corrective action will be delayed and the result will be an expensive "redo."

ValTip

Sometimes the best approach to take with an engagement that is floundering economically is to take the practice's best people and put them on the job to finish it up.

Many engagement leaders are reluctant to get into the details or tasks of the engagement; after all, they worked hard and learned their craft in order to delegate work to others. But the profits are in the details, and depending on the type of engagements, the leader must plan and monitor the work and carefully manage time devoted by the team to the engagement.

ValTip

The old adage "People do what you inspect, not what you expect" applies to valuation engagements, for team members may not know or admit on a timely basis that they are off track about the direction their work is headed.

The key is to review the status of each team member on a timely basis to avoid misdirection of his or her efforts. This principle can also apply to the engagement leader. The reason for the universal application of this principle is that performing business valuations and consulting engagements requires the exercising of a considerable degree of sequential and overall judgment. Anyone can "get off track" somewhere within the planning, framework, and conclusions of an engagement. Everyone can benefit from collaboration with another professional, if appropriate and applicable.

ValTip

A very general rule of thumb for frequency of inspection by a practice leader or engagement manager is that the work of juniors/novices should be reviewed every two hours. The work of all other professionals should be inspected on a time interval of three hours for each year of their experience. This is particularly affected by the type and complexity of the engagement, the staff person, and the practice leader.

LITIGATION SERVICES ENGAGEMENTS

Litigation services present significant differences from typical business valuation engagements, even though the engagement may entail only performing a business valuation or evaluating the work of another analyst. Some of the reasons for the differences between typical valuation assignments and litigation services are:

- The uncertainty of the nature, scope, and timing of dispute resolution work
- The fact that dispute resolution engagements can and often do end abruptly, with unbilled work in process and unpaid billings
- Third-party involvement and influence, especially the client's attorney and an adversary expert
- High stress on the analyst due to many reasons, including an emotional client
- Some of the work may have to be done alone or with less-experienced staff
- Written reports, required by U.S. District Courts, that are not typical valuation reports
- Disruption to normal nondispute work flow, including time lost while waiting to testify or obtain guidance

Practically everything that is required to produce good economics is magnified with litigation services, including the opportunity to bill practically all hours at higher profits. To avail oneself of this opportunity, the practitioner must be more careful and diligent in observing many of the principles discussed in previous sections of this chapter.

Planning and Communication

Because of the consulting nature of dispute work, an organized problem-solving approach should be used in the planning stages and as the engagement progresses. One such approach is commonly called the "look-back" approach due to its technique of visualizing all the elements needed at various stages of delivery and then looking back to plan in reverse all the tasks that are needed to reach the delivery point on time.

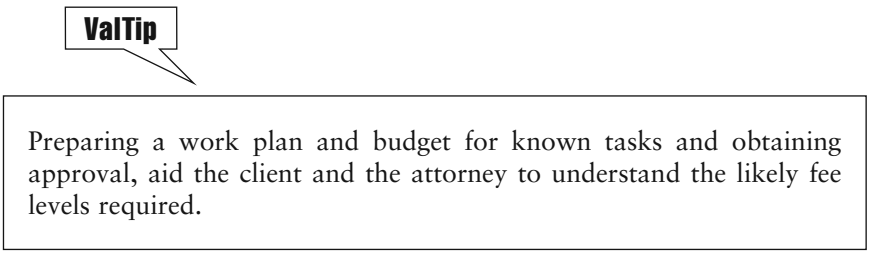
The analyst's qualifications for the potential engagement are considered carefully because someone else may challenge the work product, especially if the engagement is for expert witness testimony or court-appointed valuations. Depending on the type of engagement, practitioners may be well advised to collaborate with another experienced practitioner on dispute resolution engagements, especially less experienced expert witnesses.

Timing of Work

Because disputes begin with a number of key unknowns about data to be used and tasks that are needed, and because disputes are prone to end abruptly due to settlement, the scope of work assigned to the analyst at the outset often changes significantly. Due to this factor, anticipated revenue flow may terminate prematurely. When work is assigned, it should be completed as soon as possible within the schedule agreed on with the client or the attorney. This may help an attorney in the settlement process. Also due to the shifting nature of the tasks within the scope of a dispute engagement, when the completion date for a task is delayed but not canceled, a timely completion of this task according to the original schedule will mean it will not have to be completed at a later date, possibly under more stressful conditions.

Work Plans, Budgets, Billings, and Collections

Again, the nature of disputes—with their uncertain scope of work and propensity for an abrupt ending—requires an even greater awareness and attention to the principles needed to attain good economics.



Additional work plans and budgets may be used as the engagement progresses. Prompt and frequent billings and payments are important, all of which should be explained in the acceptance process and insisted on during the engagement. In a high-fee engagement, billing should occur more frequently than monthly, perhaps weekly or every two weeks. Determine at the outset the billing format desired by the

client and the attorney. Plan the scope of written reports as soon as possible, and budget liberally for time to prepare the reports and review them with the client and attorney. The cost to prepare written reports, especially Rule 26 reports for U.S. District Courts, can be a great surprise.

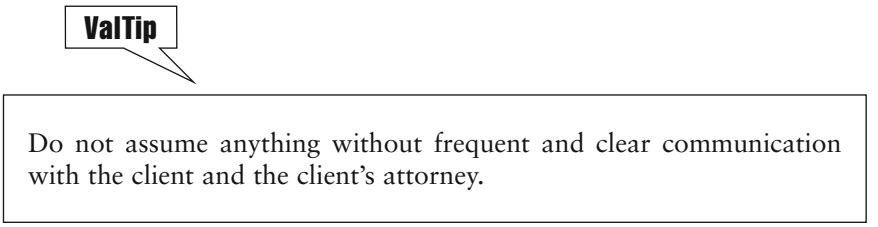
Supervision and Engagement Control

The engagement leader is often involved in certain details of litigation services tasks, regardless of whether he or she is to be a consultant or expert witness. Three major reasons for this are:

1. The consulting role calls for the analyst to provide a wide range of ideas and problem-solving advice.
2. The testifying expert must know all the details of the work plan that provide the foundation for opinions.
3. Other than the preparation of the business valuation aspects of dispute engagements, some of the tasks to be performed may be unique, and staff may not be as experienced with this type of work.

Working with the Client's Attorney

In litigation engagements, the client's attorney is likely to be directly involved with the analyst's work, and the client may have little or no involvement. For good economics and other reasons, the analyst needs to communicate proactively, clearly, and often with the attorney on many aspects of the engagement. The client's attorney is also very likely to be the go-between for all client communications, which places a premium on clear understanding with the attorney about retainers, fees, payment of invoices, and any action required by the client.



CONCLUSION

Professionals in service firms, particularly the leaders, need to practice the three Ms (Marketing, Managing, and Making Money) to ensure a rewarding and fulfilling career and successful practice. The disciplines of planning and supervision will greatly assist in the achievement of the desired goals of the practice and its professionals.

CHAPTER 22

Business (Commercial) Damages

This chapter discusses the legal principles and quantitative issues and methods related to determining business (commercial) damages in litigation matters. It illustrates the differences between the estimation of value for a business valuation and the calculation of lost profit damages. The theory and practice described apply to both testifying experts (professionals who expect to testify as expert witnesses) and consulting experts (professionals who do not expect to testify but who will serve as consultants to attorneys). Only compensatory damages (lost profits and diminution of value) are discussed in this chapter. Benefitof-the-bargain, recovery of out-of-pocket expenses, punitive damages, and other types of recovery allowable under the law are not discussed. Nor are areas of the law with specific criteria for determining recoverable damages such as patent infringement cases addressed.

ROLE OF THE LAW AND FINANCIAL EXPERTS

The law drives all litigation matters including damage issues. Case law and statutory law are the most important areas of the law that apply to financial experts.

ValTip

Although financial experts are usually not attorneys and are not expected by their professional standards to know the law, attorneys frequently choose experts who have some knowledge of the law that applies to a particular litigation matter.

As a practical matter, the financial expert may want to become familiar with important cases and statutory law in the jurisdiction in which a particular matter will be tried.

Financial professionals who serve as testifying experts will be retained by the plaintiff or defendant or will work as a jointly retained or court-appointed expert. In commercial damage cases, the plaintiff's expert will present an opinion of the amount of damages and the basis for the opinion. The defendant's expert will either

critique the plaintiff's damage opinion and/or offer an alternative damage calculation.

LEGAL PRINCIPLES GOVERNING DAMAGES

For the plaintiff to be awarded damages in commercial litigation, they must prove two things:

1. The defendant was liable (e.g., it breached the contract or its product was defective).
2. The plaintiff suffered damages as a result of the defendant's actions.

In most commercial litigation, the financial expert is not involved in the liability portion of the case (with some exceptions, e.g., proving accounting malpractice). Therefore, only legal principles most relevant to the financial expert are discussed in the following sections.

Reasonable Certainty

The plaintiff must prove that the damages claimed are *reasonably certain,* that is, it is reasonably certain that the plaintiff would have earned the amount of claimed lost profits or the company would have been worth the specified business value.

ValTip

Establishing reasonable certainty involves rigorous analysis, of which the identification and testing of key assumptions may be an important part. Some of these key assumptions are based on client representations.

Accountants who compile financial statements (as opposed to audited and reviewed financial statements) and who prepare tax returns are accustomed to accepting client representations without independent verification or testing. However, in a litigation setting, similar blanket acceptance of key client representations should not be done unless they are considered reasonable by the expert. Critical assumptions that have not been evaluated for reasonableness may not be accepted by the trier of fact (e.g., jury, judge, arbitrator) and may render the expert's damage opinion invalid. Therefore, it becomes imperative for the financial expert to evaluate the key assumptions to the damage opinion, including those provided by the client, under the principle of reasonable certainty.

Business plans (or litigant's financial projections) sometimes are used as a foundation for damage calculations because business plans and projections created prior to the wrongful actions are independent of the litigation motives of the parties. However, since some courts have ruled that unproven business plans and financial

projections are not adequate to provide the base assumptions for damages calculations, they still should be evaluated for reasonableness.

Proximate Cause

The plaintiff also must prove *proximate cause,* that is, that damages have been proximately (directly) caused by the defendant's wrongful conduct. Sometimes *proximate cause* is simply referred to as *causation.* Under the principle of proximate cause, only that portion of the decline in plaintiff profits attributable to defendant's wrongful actions is recoverable. For example, loss of profits due to a slowdown in the economy are not recoverable.

ValTip

Attorneys sometimes request that financial experts offer opinions on causation. The expert should evaluate whether he or she has the qualifications and foundation to render such an opinion.

Foreseeability

Another legal principle applicable to contract claims but not torts is *foreseeability,* that is, "whether and to what extent . . . . damages, to be recoverable, must have been foreseeable as a natural and probable result of a breach of contract at the time the contract was made."[1] In other words, the plaintiff must show that, at the time the contract was made, the claimed lost profits were a foreseeable result of the defendant's wrongful actions. Damages that actually may have occurred but were not foreseen as a probable result of a hypothetical breach during the making of the contract by the parties, are not recoverable.

Example: A parts manufacturer was delinquent in delivering goods to an automotive plant according to the schedule specified in the contract. This delay at one plant had a compounding effect and caused three other plants to be shut down. Based on the foreseeability principle, the plaintiff recovered its losses at all four plants because both parties, during the making of the contract, had contemplated and understood the compounding effect of a scheduling delinquency.

DAUBERT AND ADMISSIBILITY OF EXPERT OPINIONS

In the 1990s, several court cases raised the standards for the admissibility of expert testimony in federal jurisdictions. The most notable is *Daubert v. Merrell Dow Pharmaceuticals, Inc.* (113 S. Ct. 2786, 125 C. Ed., 2d 469 [1993]). This case established trial judges as "gatekeepers" over the admissibility of expert testimony at trial.

[1] R. Dunn, *Recovery of Damages for Lost Profits,* 5th ed. (Westport, CT: Lawpress Corporation, 1998), § 1.8.

ValTip

Although *Daubert* involved a scientific expert, the court set forth four criteria by which a trial judge could evaluate the reliability of all expert testimony.

The *Daubert* factors are enumerated in Supreme Court of the United States No. 92-102, *William Daubert, et ux, etc., et al, Petitioners v. Merrell Dow Pharmaceuticals, Inc.*:

- ". . . whether a theory or technique . . . can be (and has been) tested."
- ". . . whether the theory or technique has been subjected to peer review and publication."
- ". . . the known or potential rate of error . . . and the existence and maintenance of standards controlling the technique's operation."
- ". . . explicit identification of a relevant scientific community and an express determination of a particular degree of acceptance within that community."

Since the Court stated that these factors should be applied flexibly and that other factors also may be considered, the *Daubert* factors are not necessarily applied literally.

Congruent with *Daubert*, Federal Rule of Evidence 702, "Testimony by Experts," states that an expert witness may testify "if (1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case."

Daubert and Rule 702 emphasize that expert witnesses must apply accepted methods in the proper context and should expect to defend such methods not only through *ipse dixit* ("because I said so") but also through external proofs of various kinds. Since the 1993 *Daubert* case, the federal courts have been moving resolutely toward excluding "junk" testimony. In addition, some state courts have adopted stricter criteria for the admissibility of expert testimony.

What does this mean for the financial expert providing testimony? The expert should be prepared to prove that the methods and damage theory being used are generally accepted in the professional community. The expert should know the relevant professional standards and apply them properly. The expert should be knowledgeable of and be prepared to reference the appropriate professional literature for generally accepted methods. Furthermore, critical underlying data and assumptions should be reasonable.

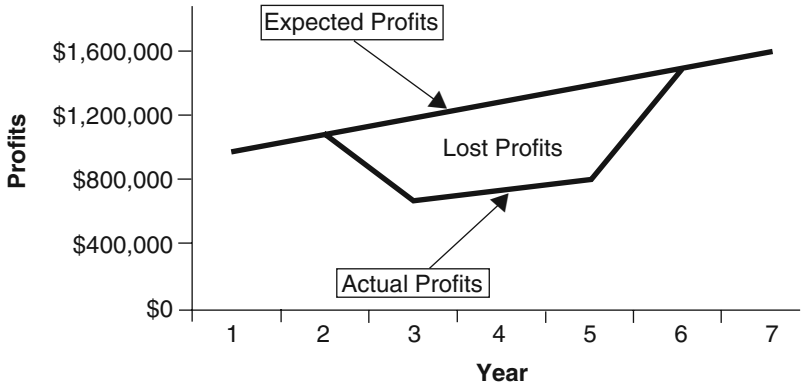
MEASURE OF DAMAGES: DIMINUTION OF VALUE OR LOST PROFITS

Commercial damages typically are measured by one of two standards: lost profits or diminution of value. When is each of these measures appropriate? The following scenarios will provide guidance from which to answer this question.

Scenario 1: Temporary Impairment

The defendant breached a five-year contract to purchase merchandise from the plaintiff. These lost revenues represented only a portion of the plaintiff's entire business. The company mitigated its damages by eventually replacing the lost sales, and the business continued to operate. The results of the breach are illustrated in Exhibit 22.1. The measure of damages for a temporary impairment is considered lost profits.

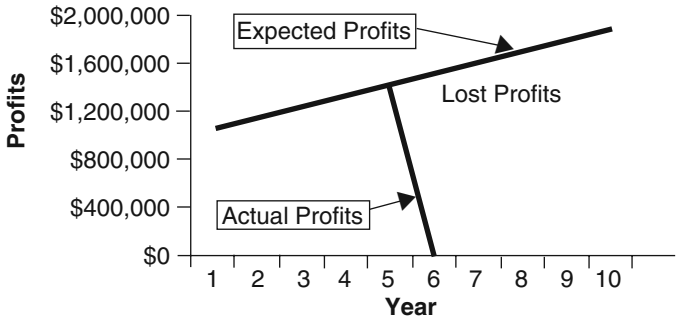
Exhibit 22.1 Temporary Impairment



Scenario 2: Immediate Destruction of Business

The defendant breached a five-year contract to purchase merchandise from the plaintiff. These lost revenues represented substantially all of the plaintiff's revenues, and the remaining customer revenues did not cover the business's fixed costs. As a result, the plaintiff went out of business soon after the breach. The results of the breach for this example are illustrated in Exhibit 22.2.

Exhibit 22.2 Immediate Destruction of Business

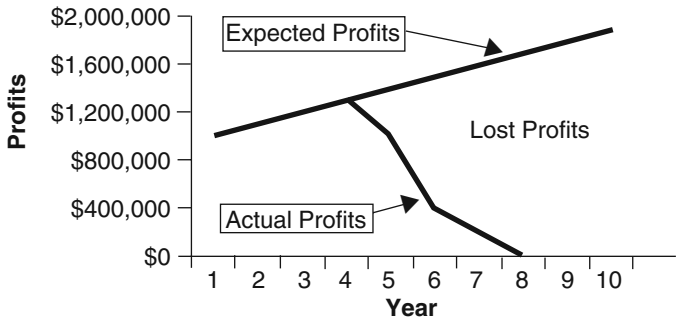


Where an immediate destruction of the business occurs, diminution of value generally would be indicated as the most appropriate measure of damages. Under the income approach of valuation, the present value of the future earnings (lost profits) is the value of the company under the discounted future earnings method using the business's cost of capital as the discount rate.

Scenario 3: Slow Death of Business

The defendant breached a five-year contract to purchase merchandise from the plaintiff. These lost revenues represented a substantial portion of the plaintiff's revenues. The company struggled to stay in business for a few years before it eventually closed due to the breach. The results of the breach for this example are illustrated in Exhibit 22.3.

Exhibit 22.3 Slow Death of Business



The slow death of a business, as presented above, might use a combination of the two measures. For the period after the breach in which the business still operated, a lost profits calculation could be done. When the business ceased its operations, a value for the business might be established *as of that date*, using the diminution of value measure.

Reasonable certainty and proximate cause also would have to be demonstrated to calculate damages by any measure.

DIFFERENCES BETWEEN DAMAGE COMPUTATIONS AND BUSINESS VALUATIONS

The differences between the assumptions and methodologies used in commercial damage calculations and those used in business valuations are slight in some regards and great in others. The most common differences between business valuations and

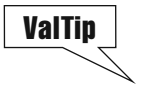
Exhibit 22.4 Common Differences Between Lost Profit Calculations and Business Valuations (FMV)

Issue	Lost Profit Calculations	Business Valuations
Level of Scrutiny	High	Typically low outside of litigation, otherwise high
Period of Recovery	Damages calculated for a fixed period and meet the test of reasonable certainty	Valuation done as of specific date and company usually assumed to continue in perpetuity
Protagonist	Actual, specific litigant-may be unwilling buyer/seller	Hypothetical willing buyer and seller
Incremental Costs	Need to calculate costs that would have been incurred, had plaintiff made projected lost revenues	Not applicable
Pre-Judgment Interest	Often required to calculate interest payable to plaintiff between date of injury and date of trial	Typically not done by appraiser
Discount Rates	Often based on what would make the plaintiff whole under the circumstances	Based on company's cost of capital
Benefit Stream	Either income or cash flow	Typically cash flow
Tax Considerations	Use after-tax discount rate on pre-tax lost profits	Matching of after-tax discount rate with after-tax benefit stream
Subsequent Events	All information through date of trial usually considered	Usually information considered up to valuation date

lost profit calculations are summarized in Exhibit 22.4. Several of these differences are discussed in depth.

Level of Scrutiny

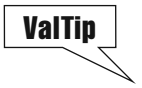
The level of scrutiny of a business valuation in a litigation setting is significantly higher than valuations done for other reasons. Often opposing counsel will ask a series of questions designed to attack the expert's credibility and destroy his or her testimony. In most nonlitigation situations, however, the distribution of the valuation professional's report is limited, as is scrutiny of report details, underlying data, and the valuation professional's qualifications.



In litigation, the financial expert can expect to be challenged regarding qualifications, the proper application of valuation theory, and the appropriateness of the underlying assumptions and facts.

Period of Recovery

The period of recovery is sometimes called the damage period or period of loss. In a lost profits model, the damage calculation is made for a specific time period (e.g., from the date of injury to date of trial plus three years), implying a time limitation for recoverable lost profits.



One of the most challenging aspects of a lost profits calculation is determining how far into the future to project ongoing lost profits. The period of recovery largely depends on the facts and circumstances of the case and on the tests for reasonable certainty and proximate cause.

For example, if a defendant has breached a long-term contract with 20 years of the term remaining, can a lost profits calculation for 20 years in the future pass the test of reasonable certainty? What economic or industry factors might affect a 20-year lost profits projection and, thus, create a problem with the test of proximate cause? Due to the speculative nature of such long-term projections, many courts and experts believe that, in most situations, lost business profits can be projected about three to five years into the future (at most) and still pass the tests for reasonable certainty and proximate cause.[2] In any event, the damage period will not extend beyond a reasonable time for the plaintiff to fully recover from the injury inflicted by the defendant.

Business valuations are based on a value estimate as of a single, specific date and usually assume the business will operate into perpetuity.

Protagonist—Litigant versus Hypothetical Willing Buyer/Seller

In business litigation, the objective is to make the plaintiff whole. Doing this requires the consideration of a specific plaintiff's unique facts and circumstances. In

[2] For example, see B. Brinig et al., *Guide to Litigation Support Services*, 5th ed. (Fort Worth, TX: Practitioner Publishing Company, 2000), ¶ 303.37 and Dunn, *Recovery of Damages*, § 6.19.

many situations, this may not fit the standards established by the business valuation profession for fair market value.

In business valuation, not only do the fair market value standards exclude specific buyers and sellers in favor of the "hypothetical" buyer/seller, but they also require that the hypothetical buyer/seller be willing and fully informed. In business litigation, none of these requirements for buyer and seller may be met.

Incremental Costs

Incremental costs are those expenses that, due to lost sales, the plaintiff does not incur. In damage calculations for businesses that have been partially impaired, the incremental costs associated with lost revenues will be used to reduce those lost revenues and arrive at an estimate of lost profits.

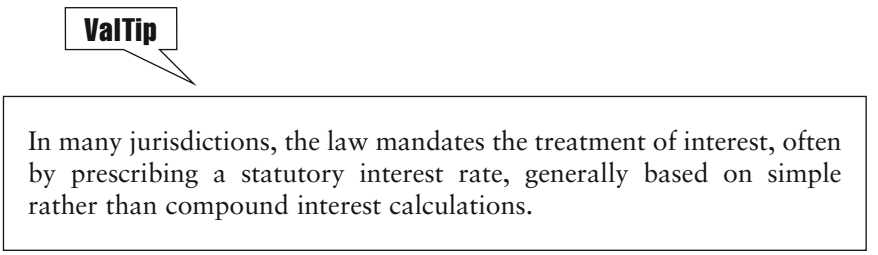
Example: If a tire factory lost a contract order for $1 million in sales, the costs of manufacturing and selling those tires will be deducted as incremental costs according to the following formula:

$$\text{Lost Revenues} - \text{Incremental Costs} = \text{Lost Profit}$$

Since business valuations typically focus on valuing the company's earnings or cash flow, all the company's expenses are usually considered in the computations.

Prejudgment Interest

In business litigation, the financial expert may be required to value the plaintiff at some date in the past and then provide an additional damage calculation, called prejudgment interest, from the date of injury up to the date of trial.



If the law is silent regarding prejudgment interest, the expert will want to examine judicial practice in the jurisdiction of the trial and ask the attorney whether the court or the expert will perform prejudgment interest calculations. If there is no legal guidance available, the expert will have to select and apply a discount rate he or she believes is appropriate, taking into account that a discount rate to be used with past lost profits may need to be different from that to be used with future lost profits.

Prejudgment interest is not normally calculated in a traditional business valuation.

Discount Rates

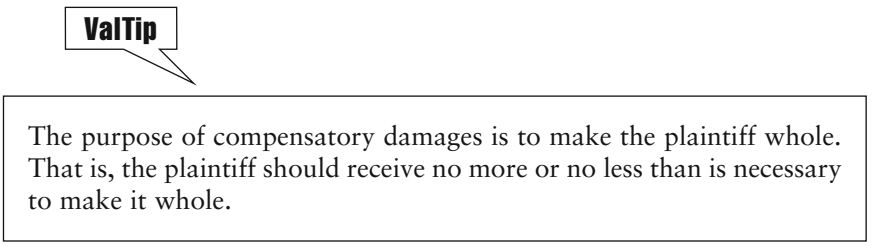
The discussion in this section uses "nominal" currency amounts and rates of return that include the effects of inflation rather than "real" currency amounts and rates of return where the effects of inflation have been eliminated.[3]

Discount rates are used in lost profit calculations for determining the present value of lost future income. The selection of the discount rate has a significant effect on the present value of the future lost profits and, thus, on the amount of the damages awarded to the plaintiff. Exhibit 22.5 provides an example of the magnitude of this effect.

Exhibit 22.5 Effect of Discount Rates on Lost Profits (Midyear Convention)

Total Lost Profits for 3 Years into the Future ($100,000 + 110,000 + 120,000)	$330,000
Present Value of $330,000 at 5%	$306,048
Present Value of $330,000 at 10%	$285,251
Present Value of $330,000 at 20%	$251,040

In addition, the determination of an appropriate discount rate to use in calculating business damages involves a fundamental legal presumption.



While it is common for the courts to award damages to make the plaintiff whole, there may be situations where damages are limited as a matter of law. In other situations the law might allow the plaintiff to recover more than its lost profits, as in cases that disgorge the defendant of its profits (unjust enrichment). This chapter discusses the concept of making the plaintiff whole as a matter of fact rather than exceptions as a matter of law.

There is little guidance in finance literature or case law to direct the expert in selecting the appropriate discount rate for future lost profit damages. Financial experts generally have viewed the appropriate discount rate for lost profit damages in three ways:

[3] Nominal amounts are the actual currency amounts or rates of return including inflation. Real amounts are inflation-adjusted currency amounts or rates of return. Some economists present rates of return in damage calculations as real rates, or inflation-adjusted rates. A 5 percent real rate of return for a safe investment would be reduced by inflation of, say, 3 percent, to result in a real return of 2 percent.

1. Use a risky projection of future lost profits and apply a higher discount rate to consider the higher level of risk.[4]
2. Use a low-risk (conservative) projection and apply a low-risk discount rate.
3. Use a discount rate based on how the plaintiff will invest the damage award and apply it to a projection of future lost profits that is "reasonably certain."

The first and second approaches of determining a discount rate are analogous to the determination of the cost of capital in the discounted cash flow (DCF) methodology in business valuations. The third approach focuses on the plaintiff's investment return on the damage award.

This approach suggests the consideration of how the plaintiff can be expected to reasonably "invest" the portion of a court award related to future lost profits. Using the previous table, if the plaintiff reasonably expects to invest a court award received today at a rate of return of 10 percent, then it would receive $285,251 from a court award today and invest it at 10 percent to compensate it for the $330,000 of profits it would have received over the next three years. An award based on a 5 percent discount rate but actually invested at 10 percent would overcompensate the plaintiff. An award based on a 20 percent discount rate but actually invested at 10 percent would undercompensate the plaintiff.

Several benchmarks that could be used to assist in selecting appropriate discount rates include:

- Return on a conservative investment
- Return on an investment portfolio
- The company's cost of debt
- The company's weighted average cost of capital
- The company's cost of equity
- Return on an investment similar to the destroyed business

The facts and circumstances necessary to select one of these will vary from case to case. The selection of a discount rate in any specific lawsuit may depend on matters of fact and matters of law. For example, the requirement of a risk-free discount rate might be a matter of law mandated by a prior case in the jurisdiction. Matters of fact might include consideration of these types of questions:

- If a plaintiff is partially impaired, does it have the ability to reinvest a damage award in the company?
- If the plaintiff is totally destroyed, should it be assumed that the plaintiff should invest a damage award in another investment similar to the destroyed business?

Some practitioners believe the discount rate also should factor in the risks associated with achieving projected future lost profits, as is commonly done in business valuations. However, some courts have rejected this approach.[5] As previously men-

[4] The case that is often cited is *Jones & Laughlin Steel Co. v. Pfeifer*, 462 U.S. 538 (1983), which discussed parity in risk, parity in inflation, and parity in income taxes. However, this case was related to personal injury.

[5] See *American List Corp. v. U.S. News & World Report, Inc.*, 75 N.Y.2d 38, 550 N.Y.S.2d 590 (1989). In this case, the trial court found a higher discount rate (18 percent) should be used to factor in the risk the plaintiff would not be able to perform the contract in the future. The appellate court rejected the higher discount rate.

tioned, in determining the discount rate, there is little guidance from case law regarding what factors to consider.[6]

The following are cases that address the discount rate in future lost profit damages.

Energy Capital Corp. v. The United States[7]

The plaintiff had a contract with the U.S. government to originate $200 million in loans related to government-assisted housing. The contract was breached. In determining future lost profit damages, the court stated, "there is relatively little authority respecting the discount rate that should be used in reducing prospective damages to present value." The court also said that it believes issues about discounting are separate from issues about reasonable certainty. It stated "[t]he Plaintiff's accuracy in discounting does not affect whether it has calculated its lost profit damages with reasonable certainty." It also stated "[t]he discount rate reflects the concept that the money awarded today will accumulate interest and grow to approximate the money that the Plaintiff would have earned in future lost profits over the course of the contract." This ruling on the appropriate discount rate was based on a matter of law rather than fact. Therefore, this court did not relate the risk in the projections of future profits to a risk-related discount.

The court separately found that the plaintiff's claim for lost profits was made with "reasonable certainty" (and it noted that "absoluteness" was not necessary). The plaintiff's expert used a discount rate of 10.5 percent and the defendant's expert used a 25 percent rate. Both of these were risk-adjusted discount rates. (The plaintiff's 10.5 percent rate was based on mortgage real estate investment trust returns plus a 2 percent premium adjustment.) The court found that the appropriate discount rate is the rate of return on "conservative investment returns" as a matter of law and determined it to be 5.9 percent based on 10-year Treasury notes as of a date close to the ruling.

Burger King Corporation v. Barnes[8]

In this case, Barnes had operated a franchised fast food restaurant for 29 months. The court allowed Burger King Corporation's damages related to future lost royalties to be projected for 210 months (17.5 years) into the future over the remaining term of the franchise agreement based on the amount of the restaurant's historical sales. The opinion indicates that neither inflation nor any other increase in profits was projected above the actual historic sales. The future lost profits were discounted at a 9 percent discount rate. Therefore, the 9 percent is a real rate of return rather than a nominal rate.

Knox v. Taylor[9]

The appellate court did not overturn the use of a 7 percent risk-free discount rate in a lost-profit damage calculation as a matter of law.

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[6] Dunn, *Recovery of Damages*, p. 504.
[7] *Energy Capital Corp. v. The United States,* 47 Fed. Ct. 382 (U.S. Claims 2000).
[8] *Burger King Corporation v. Barnes,* 1 F. Supp 2d 1367 (S.D. Fla. 1998).
[9] *Knox v. Taylor,* 992 S.W.2d 40 (Tex. App. 1999).

Olson v. Neiman's, Ltd.[10]

The appellate court allowed the expert's damage opinion for the plaintiff that used a 19.4 percent discount rate based on a 14.4 percent normal return for public companies plus a 5 percent premium for risk. The discount rate was applied to lost royalty income.

For a more detailed quantitative analysis on taxes and discount rates, see G. Hallman and M. Wagner, "Tax Effects of Discount Rates in Taxable Damage Awards," *CPA Expert* (Winter 1999): 1-5.

Tax Considerations

Business damages are subject to taxation under the Internal Revenue Code.[11] Therefore, the Internal Revenue Service will tax a court award or settlement, and taxes should be considered in the damage calculation. The thought process and calculation go as follows:

Had the plaintiff remained in its original condition before the injury, it would have earned certain profits and paid the associated income taxes. Exhibit 22.6 demonstrates the expected profits of the plaintiff, XYZ Inc., "but-for" the defendant's actions, for three years into the future. Year 0 represents the current base year used in projecting future profits for years 1 to 3. Assume that XYZ Inc. has a constant effective tax rate of 40 percent.

Exhibit 22.6 XYZ Inc.: Expected Future Income But-For the Defendant's Actions

	Year			
	0	1	2	3
Income before taxes	$100,000	$110,000	$121,000	$133,100
Income taxes at 40%	(40,000)	(44,000)	(48,400)	(53,240)
Net Income	$ 60,000	$ 66,000	$ 72,600	$ 79,860

Exhibit 22.7 demonstrates a calculation of damages, based on discounting XYZ's pretax income at its after-tax weighted average cost of capital WACC of 12 percent and using the midyear discounting convention.

Exhibit 22.7 XYZ Inc.: Calculation of Damages for Future Lost Profits

Year	Future Lost Profits (pre-tax)	Present Value
1	$110,000	$103,940
2	121,000	102,084
3	133,100	100,261
	Damages	$306,285

[10] *Olson v. Neiman's, Ltd.*, 579 N.W.2d 299 (Iowa 1998).

[11] Only compensatory damages related to personal physical injury or sickness are excluded from taxable income. See Internal Revenue Code § 104(a)(2).

In a court award, XYZ would receive $306,285 as full compensation for future lost profits. After a 40 percent tax hit, XYZ would have $183,772, which it could reinvest at its WACC of 12 percent.

Exhibit 22.8 presents the calculations for determining how much XYZ Inc. expects to have at the end of a three-year period during which it has reinvested the net-of-tax damage award of $183,772 at its WACC of 12 percent.

Exhibit 22.8 Reinvestment of Damage Award Net of Taxes

	Annual Earnings (12%)	Amount at End of Year
Damages awards after taxes are paid		$183,772
Year 1	$22,053	205,825
Year 2	24,699	230,524
Year 3	**27,663**	**258,186**

How does this amount in Exhibit 22.8 compare to what it would have received "but-for" the defendant's actions, as determined in Exhibit 22.6? Exhibit 22.9 presents the plaintiff's position at the end of year 3, using the "but-for" net income data from Exhibit 22.6.

Exhibit 22.9 But-For Net Income Plus Accumulated Earnings Through the End of Year 3

Year	But-For Net Income*	No. of Years to End of Yr. 3	Future Value at 12%
1	$66,000	2.5	$ 87,617
2	72,600	1.5	86,053
3	79,860	0.5	84,516
Total			$258,186

*See Exhibit 22.6

The results of both calculations (Exhibits 22.8 and 22.9) are identical.

ValTip

This demonstrates the concept of discounting future *pretax* earnings by the appropriate *after-tax* discount rate in calculating damages.

Were the effective tax rate to vary rather than remain constant over the projection period, a different analysis might be necessary.

In contrast to this treatment of taxes in damages calculations, in a business valuation income approach, discounts rates are developed from market data that typi-

cally are based on after-corporate-tax rates of returns for investments in public companies. Once a valuation professional has determined the appropriate discount rate using this market data, it is applied to the subject company's after-tax earnings, matching an *after-tax* discount rate with *after-tax* earnings. Theoretically, an after-tax discount rate could be adjusted to a pretax discount rate and applied to the subject company's pretax earnings to arrive at the same value. However, in many situations, this is not a common business valuation practice.

Subsequent Events

Compensatory damages in litigation seek to make the plaintiff whole at the time the trier of fact renders its decision (e.g., the date of trial). Therefore, damage computations usually consider events through the date of trial, including events subsequent to the date of injury (i.e., date of valuation).

A business valuation determines the fair market value of a business on a specific date (i.e., the valuation date) by contemplating what a hypothetical willing buyer would pay for it on that date. Only the information that was known or knowable to the hypothetical buyer and seller on that date is usually considered. Events that occur subsequent to the valuation date usually are not considered because they are unknowable to the hypothetical buyer and seller.

Example: Sample Corp. was destroyed in September 2002 by a hurricane. If a financial expert were asked to calculate Sample Corp.'s lost profits damages for an injury that impaired the business in August 2001, and the trial occurred in October, 2003, the expert would need to include the effect of the hurricane in the calculations to ensure that Sample Corp. was not going to be made more than whole (this would not be true if the law did not allow consideration of the hurricane).

However, if the same financial expert were asked to value Sample Corp. for tax purposes as of August 31, 2001, the expert may not include the effect of the hurricane in the calculations since it was unknowable on the date of the valuation (e.g., August 31, 2001).

CAN BUSINESS DAMAGES EXCEED THE FAIR MARKET VALUE OF THE BUSINESS?

There is no general legal guidance for an expert in determining whether lost profit damages can exceed the value of a business. Since the expert does not have any matter of law as a guide, the matters of fact in each specific case determine the answer. Business damages could exceed the fair market value of the business for two reasons:

1. The facts and circumstances of the case
2. The differences between lost profit damage calculations and the business valuation fair market value standard

Since the goal of awarding compensatory damages is to make the plaintiff whole, there are valid facts and circumstances under which a damage award for the fair market value of the business might not achieve that goal.

Example: A governmental entity decided to widen a public road and condemned part of the land owned by a franchised fast food restaurant. As a result of taking away the land, the restaurant lost one-third of its parking and could no

longer operate profitably from that location. Due to limited availability of other restaurant sites and possible infringement on the territories of other franchisees, the restaurant could not relocate. The restaurant was forced to cease operations and had no opportunity to mitigate its losses. Should damages be limited to the fair market value of the fast food restaurant?

Assuming the restaurant's cost of equity was 25 percent, and assuming damages were limited to the fair market value of the business, an award would have been made based on the theory that the plaintiff would put the award into an investment yielding a 25 percent rate of return for the future. In reality, however, there were no conventional investments that would generate a consistent 25 percent rate of return.

Although the argument might be made that the plaintiff could use the award to buy another comparable business yielding a 25 percent rate of return, from a legal standpoint should the plaintiff be forced to undergo the risks and effort involved in a search for such a hypothetical business, which may not actually exist? In addition, suppose the plaintiff was a passive owner, 60 years of age, and in poor health? What if the plaintiff only had skills in operating a fast food restaurant? How should these specific facts be considered in computing the plaintiff's damages?

In this example, it is clear that a damage award limited to the fair market value of the business may not make the plaintiff whole.

Therefore, it is important to consider the unique facts and circumstances of the case when determining the best approach to measure the plaintiff's damages. Each case is different, and the plaintiff's situation should be considered. In addition, local law should be taken into account.

CONCLUSION

Business damages are part of a lawsuit and are subject to statutes, case law, local judicial practice, and legal interpretations. The expert should look to the attorney to give direction in these areas. Matters of law in a particular case are outside of a financial expert's expertise and should be explained by the attorney on how they affect damages. Legal matters may have a substantial effect on the amount of damages that are recoverable. Matters of fact are not legal in nature and are the subject of the opinion of experts and others.

CHAPTER 23

Other Valuation Services Areas

This chapter presents limited and general information on other valuation services areas that analysts sometimes encounter. The following sections only provide an overview of each topic. Future editions of this book may expand on these areas.

A: Valuation Issues in Mergers and Acquisitions
B: Valuation for Public Companies and/or Financial Reporting
C: Valuation Issues in Buy-Sell Agreements
D: Valuation Issues in Pass-Through Entities
E: Valuing Debt
F: Valuation Issues in Preferred Stock
G: Restricted Stock Valuation
H: Valuation of Early-Stage Technology Companies
I: Valuation Issues Related to Stock Options
J: Real Option Valuations
K: Maximizing Shareholder Value

A: VALUATION ISSUES IN MERGERS AND ACQUISITIONS

Introduction

One of the most complex and challenging purposes for a valuation, particularly for private companies, is in a merger or acquisition. The valuation is complex because of issues such as synergies that are unique to transactions and also because of the complex nature of the acquisition process and its many stakeholders.

Studies show that most acquisitions do not create any value for the acquiring company. While there are a variety of reasons for this, one of the most important is that initially the acquirer failed to identify and then maintain the value drivers of the acquired company.[1] A proper valuation prior to the transaction would assist the acquirer to realize a far more successful acquisition (see Chapter 1).

One of the first things to consider in preparing a valuation for a merger or acquisition is the rationale for the transaction, because it lays the groundwork for the valuation and will identify value drivers right from the start. Reasons for transactions often include:

[1] Tom Copeland, Tim Koller, and Jack Murrin, *Valuation Measuring and Managing the Value of Companies,* 3rd ed. (New York: John Wiley & Sons, Inc., 2000), pp. 112–118.

- Value creation through synergy of the combined firms
- Diversification to reduce risk
- Value creation through restructuring and better management
- Undervaluation of the target by the markets or the target is a "good investment"
- Hubris on the part of senior management

The rationale for a transaction presents the framework for the valuation methodology to be used. For example, if the reason for the transaction is to create value through the synergy of the combined firms, then the value of the potential operating or financial synergies should be explored. If the rationale for the transaction is that the target is a good investment, then the company should be valued as a stand-alone entity and compared to either its selling price or its per-share price on the public exchange. If the acquirer is seeking to diversify to reduce risk, then the target's cost of capital should be analyzed for its impact on the combined firms.

In many respects valuation methodology for mergers and acquisitions is similar to valuations for other purposes. Valuations or pricing analysis in transactions within a particular industry are often based on market-derived multiples of recent similar transactions within that industry. Many valuation analysts also utilize discounted cash flow analysis as an additional methodology to price a transaction. Certain valuation issues heavily influence transaction value:

- Appropriate standard of value in a transaction
- Value of synergy
- Control premiums versus acquisition premiums
- Cost of capital in a transaction
- Accounting issues in business combinations
- Fairness opinions and pricing analysis

Standard of Value

After determining the motive for the merger or acquisition, one of the first valuation issues that must be considered is the standard of value, which may differ according to the motive for the acquisition (see Chapter 1).

Fair Market Value

Fair market value assumes a hypothetical willing buyer and seller, each with reasonable knowledge of relevant information, but neither under any compulsion to buy or sell. These conditions rarely, if ever, exist in a transaction. Normally the seller has much more information than the potential buyer. Often there are conditions that make the bargaining power of one party greater than the other. In spite of this, however, fair market value sometimes is used as a standard of value in a transaction.

A valuation under fair market value may take into consideration some value-creation assumptions, such as normalizing salaries and other adjustments that any acquirer would make to increase value. A valuation for a potential acquisition using fair market value as the standard of value can be helpful in pricing a target since it may include adjustments that most "hypothetical" acquirers would make.

ValTip

In many instances, as a starting point in pricing a transaction, a buyer will analyze the value of a transaction using assumptions that are the same as or similar to those that would be used under fair market value. This provides the buyer with a "baseline" valuation, which is a valuation of the target without any effects of the transaction itself.

ValTip

A standard of value that can be used in a transaction is valuing the target company's intrinsic value.

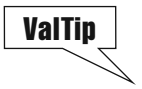
Intrinsic Value

Analysts often use intrinsic value in making buy or sell recommendations of shares of publicly traded companies. Analysts will estimate the company's intrinsic value using traditional valuation methodologies, such as discounted cash flow analysis, and compare the results from these analyses to the publicly traded price of the company. If the intrinsic value of the company indicated from these methodologies is higher than the publicly traded price, then the analysts make a buy recommendation. If the intrinsic value is less than the market price, then the analysts may make a sell recommendation.

Similarly in valuing a target for a potential acquisition, it is common to value the target's intrinsic value. The intrinsic value can be thought of as the value of the target under existing conditions based on the characteristics of the investment. Understanding the intrinsic value of the target can help a potential acquirer "price" the transaction when making an initial offer.

Investment Value

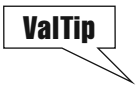
The *International Glossary of Business Valuation Terms* defines investment value as "the value to a particular investor based on individual investment requirements and expectations." Investment value differs from both fair market value and intrinsic value in that it may take into consideration the benefits specific to the transaction itself. Under investment value, the synergies derived from the transaction itself often are considered in determining value.



The most common standard of value for a merger or acquisition is probably investment value.

Fair Value

Somewhat controversial, fair value is often a standard of value in litigation matters concerning dissenting rights and shareholder oppression. The fair value standard is controversial because there is no uniform definition of fair value that is used in all jurisdictions and little consensus as to what is "fair." This can also be considered when a company is interested in buying out minority stockholders and wants to know the value if it ends up in this type of litigation.



Fair value also is used as a standard of value in accounting pronouncements. For financial reporting purposes, the fair value of an asset is defined as "the amount at which that asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing parties, that is, other than in a forced or liquidation sale."[2]

In a business combination, fair value is the standard of value in determining the allocation of a purchase price to the individual assets acquired. In a financial reporting context, fair value often is considered similar to the fair market value standard, although certain aspects of investment value are sometimes considered. Fair value is the standard of value utilized in statements for business combinations, (SFAS 141) and goodwill and other intangible assets (SFAS 142), which are discussed in a later section.

Value of Synergy[3]

One of the most difficult aspects of a valuation for a transaction is estimating the potential value of synergies which should result in a "increase in cash flows in addition to what two companies can generate independently."

[2] FASB, Statement of Financial Accounting Standards No. 141, *Business Combinations* (June 2001).

[3] This section was previously presented as an article in the Fall 1999 edition of *CPA Expert*, published by the American Institute of Certified Public Accountants. Copyright 1999 by the American Institute of Certified Public Accountants, Inc. Reported with permission.

ValTip

Synergies can be either operational or financial.

Operational synergies often are achieved through higher revenue, lower costs for the combined firms, increased operating cash flow, improved quality of managerial decision making, and sale of redundant assets. Financial synergies include tax benefits, lower cost of capital, or better use of cash reserves. The perceived value of synergies often is used as a justification for a higher acquisition price. However, valuation analysts may not consider all of the relevant factors when performing a valuation analysis of potential synergies, which may result in estimating an unrealistic acquisition price. For instance, incremental investment costs associated with actualizing potential synergies may not only exist but be material.

One possible outcome of acquisition synergies is for the acquirer to gain a more dominant position in the marketplace and enhance future cash flow. In addition, acquisition synergies may enable the acquirer to utilize available technology more effectively or intellectual property at a cost that is lower than developing it internally.

These kinds of considerations are found most often in high growth industries as was in high technology, where market share was of paramount importance and intellectual property and technology were acquired quickly through acquisitions. An example of this strategy was Sun Microsystems' acquisition of Star Division Corporation. Star Division had developed a suite of office system software similar to Microsoft Office. Sun, through its own high-quality distribution capabilities, planned to make this software available over the Internet. The acquisition was to allow Sun to acquire a functioning system without the opportunity costs associated with development time and then to offer the system as a complementary product to its existing customers in a timely fashion. Sun's strategy was to create value through increased revenue and market share.[4]

Another possible outcome of acquisition synergies is a reduction of costs through enhanced manufacturing efficiencies, consolidation of overhead, and increased economies of scale. An example of potential value creation through cost reduction is Service Corporation International (SCI). SCI is a Houston-based corporation that owned thousands of funeral homes, cemeteries, and crematories worldwide. SCI's acquisition strategy had been to acquire high-volume funeral homes, maintain their original name and local reputation, yet cluster the homes with cemeteries and other related services to reduce costs.[5]

A third possible outcome of acquisition synergies is the improvement of the quality of managerial decision making. Often an acquiring company has greater managerial and financial resources than the acquired company. The depth of these resources can result in better working capital management, shorter production cycle times, and a reduction in the need for future capital expenditures, each of which

[4] *The Wall Street Journal*, August 31, 1999.
[5] *Ibid.*

may create value. The synergies achieved from better management decisions also can result in the sale of noncore businesses, technology, and intellectual property, which can create value not only from the cash received from the initial sale of these properties but also by shifting greater managerial resources to value creation in its core competencies.

An example of this use of synergy is Telefon ABL.M Ericcson. The Swedish telecommunications company's proposed sale of the group's real estate holdings were part of the company's strategy to concentrate on its core business and to use its capital more efficiently. The market value of the divestiture of real estate was believed to be between $1.1 billion and $1.2 billion. In addition to selling certain real estate, Ericsson's capital program also included better management of accounts receivables and inventory.[6] Ericcson planned to create value through synergies derived from better asset management. While this strategy is not directly related to a recent acquisition, it does illustrate a desire to create value from a better managerial decision process from assets acquired in previous transactions.

ValTip

Selling previously acquired assets and companies also can lead to company synergies by allowing management to concentrate on what drives value in the company.

Valuation analysts often focus purely on the benefits of synergies when performing a pricing analysis for an acquisition. However, acquirers generally will need to make incremental investments before realizing the return on capital available through synergies. It is these incremental investments, or hidden costs, that cause the overvaluation of a potential target, which may lead to the degredation of value rather than the creation of value.

ValTip

Many analysts fail to consider incremental costs when performing a pricing analysis or valuation of a potential target.

One potential "cost" that many analysts often ignore in estimating the value of potential synergies is the response by competitors to the acquisition. An acquisition does not take place in a vacuum. Often the market place reacts in a manner that

[6] *Ibid.*

impacts the assumptions behind the valuation of the potential synergies of the transaction. Competitors may make acquisitions of their own that change the market's dynamics. They also may lower prices and lure away key employees of the target company. Such reactions can change the fundamentals that drive an acquisition price, and should be considered during any valuation analysis.

One recent example can be seen in the changes in pricing of long-distance phone service related to the MCI WorldCom merger. One of the reactions to the MCI WorldCom merger was lowering prices. Prior to the merger, the industry standard pricing seemed to be 10 cents per minute. Actually, after the merger the price dropped to 7 cents a minute or below, a rate that has created a hardship for the whole industry including Worldcom. In pricing the transaction, the merger analysts would have to consider the competition's reactions to the changing market dynamics.

In pricing a transaction, analysts also must consider other types of incremental investments that may be necessary to realize the value of synergies. For example, one potential benefit of acquisition synergies is the elimination of redundant overhead. However, this strategy frequently is subject to company policy and legal restraints, especially when it includes the elimination of managerial overhead which may require severance packages, relocation, training and other costs. The acquired entity also may have stranded fixed costs, such as leases and other expenses, that cannot be eliminated immediately. In addition to these costs, the acquirer often has to make an investment in process changes, such as integrating new equipment into the merged entity and training classes for employees. Analysts will want to consider the cash outflows associated with postacquisition integration issues. Postacquisition integration processes are vital to achieving value creation through synergies. However, they also create another level of risk for both the acquirer and the target, which may not be reflected in the target's cost of capital or the required rate of return for the acquisition.

ValTip

Analysts include value created from revenue enhancements, cost reductions, and creation of other efficiencies. However, when performing a valuation that includes the synergy of a transaction, analysts should be aware of "hidden" costs in a transaction, such as post merger integration issues and competitors' reactions.

Control Premiums versus Acquisition Premiums

In most mergers and acquisitions, the acquiring company has control over the combined entity after the business combination. The issue of control is as important in valuations for mergers and acquisitions as it is for valuations for other purposes since maintaining control reduces the risk for the acquirer (see Chapter 8).

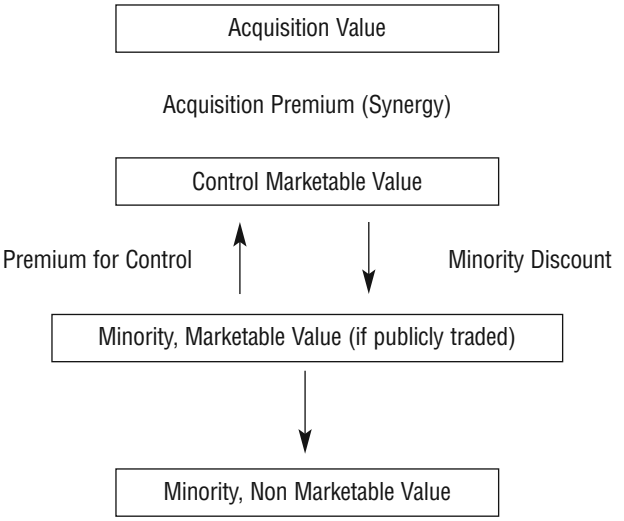
Common elements that indicate control in a transaction are familiar and include the ability to:

- Decide on levels of compensation for officers, directors, and employees.
- Decide with whom to do business and enter into binding contracts, including contracts with related parties.
- Decide whether to pay dividends and, if so, how much.
- Register the stock with the Securities and Exchange Commission for a public offering.
- Repurchase outstanding stock or issue new shares.
- Make acquisitions or divest subsidiaries or divisions.
- Buy, sell, or hypothecate any or all company assets.
- Determine capital expenditures.
- Change the capital structure.
- Amend the articles of incorporation or bylaws.
- Sell a controlling interest in the company with or without participation by minority shareholders.
- Select directors, officers, and employees.
- Determine policy, including changing the direction of the business.
- Block any of the above.[7]

However, selecting the level of premium to apply to the acquisition can be difficult because there are two types of premiums to consider, and the types should not be used interchangeably.

Most valuation analysts agree that there are at least four "levels of value" related to minority/control and marketability, as shown in Exhibit 23.1 (see Chapter 8).

Exhibit 23.1 Levels of Value



[7] Shannon P. Pratt, *Business Valuation Discounts and Premiums* (New York: John Wiley & Sons, Inc., 2001), p. 20.

Per these levels of value, analysts often use public market empirical data as proxies for premiums for control. One of the most common sources of such data is *Mergerstat Review*, which presents compiled information on completed transactions, including premiums paid, by industry. Mergerstat's "premiums" are "calculated by dividing the offer price per share by the seller's closing market price five business days prior to the announcement of the transaction."[8] This calculation indicates that such compiled public market data may not be a direct proxy for control value since it may include value related to other factors in the transaction, such as synergies, diversification, and the acquirer's zeal to "do a deal." The data may instead represent acquisition value. Therefore, analysts will want to clearly define whether they are using the data to develop an acquisition or a control premium and establish the level of premium/value accordingly.

Cost of Capital in a Transaction

A common difficulty in valuing a target entity for a potential acquisition is how to determine an appropriate cost of capital. Many large, successful acquirers often use an internal benchmark rate of return, or "hurdle rate," as the selected cost of capital. The rationale is that the hurdle rate is the rate of return that the acquirer's shareholders require to increase shareholder value.

However, the cost of capital in pricing a target should almost always reflect the relative risk of the target, not the acquirer.

Accounting Issues in Business Combinations

The Financial Accounting Standards Board (FASB) issued two statements in June 2001 that impact financial reporting for acquisitions. Statement 141, *Business Combinations*, and Statement 142, *Goodwill and Other Intangible Assets*, revise the financial reporting requirements for business combinations. These statements will impact the financial reporting of most organizations that have made acquisitions previously or will make an acquisition in the future.

SFAS 141 and 142 highlights are:

- They require the use of purchase method of accounting; pooling of interests is no longer allowed.
- They provide new criteria for recognition of the "fair value" of intangible assets.
- Goodwill is no longer amortized. Instead it is to be tested for "impairment" at the reporting unit level on at least an annual basis.

The most substantive change in the new statements is that all business combinations should be accounted for using the purchase method of accounting. The pooling of interests method in a business combination is now prohibited. Under purchase accounting all assets acquired, including goodwill and other intangible assets, should be stated on the financial statements at "fair value." The statements define intangible assets as "current and noncurrent assets (not including financial instruments) that lack physical substance."

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[8] *Mergerstat Review 2000*, p. 395. (Also available data from *Mergerstat/Shannon Pratt Control Premium Study, BVMarketData.com.)*

In addition, the new statements require that an acquired intangible asset should be recognized as an asset apart from goodwill if that asset arises from contractual or other legal rights regardless of whether those contractual or legal rights are separable or transferable from the acquired enterprise. If an intangible asset does not arise from contractual or other legal rights, it shall be recognized as an asset apart from goodwill only if it is separable or it is capable of being separated and sold, transferred, licensed, rented or exchanged.

The new statements require these separately identifiable intangible assets be recognized apart from goodwill at their fair value in a business combination. The value of an assembled workforce, due to its nature, should be rendered as a part of goodwill and is specifically excluded in the statements as a separate asset for disclosure.

Under the new statements, goodwill will continue to be recognized as an asset in business combinations. However, the new statements prohibit the amortization of goodwill. Instead they provide for an impairment test at the reporting unit level on at least an annual basis.

The impairment of goodwill is to be estimated through a two-step process. The first step is to estimate the fair value of the reporting unit and compare it to its carrying amount. If the fair value is *greater* than the carrying value, then the goodwill is not considered impaired and the second step is not required. If the fair value of the reporting unit is *less* than its carrying amount then a second step must be performed to measure the amount of impairment loss of the goodwill, if any.

The entity then allocates the fair value of the reporting unit to *all* of the assets and liabilities of the units (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination and the fair value of the reporting unit was the purchase price. The excess of carrying value over the fair value attributable to the assets and liabilities would be the impairment to fair value of the goodwill.

Valuation Implications of SFAS NOs.141 and 142

Companies that have made acquisitions should test for the potential impairment of the carrying amount of the goodwill recognized in those transactions. Companies that are planning an acquisition should begin the purchase price allocation of intangible assets and goodwill earlier in the acquisition process to plan for the financial reporting impact of these new statements. See Chapter 20 for additional information on this area.

Fairness Opinions

A fairness opinion generally is issued by a financial advisor to the board of directors of an acquisition target company and opines on the fairness of the price to be

received in the transaction. The objective of a fairness opinion is to have a qualified financial advisor provide an opinion that the consideration offered in a transaction is "fair, from a financial point of view." A fairness opinion typically is limited to the financial considerations surrounding the transaction. It is not an opinion that the highest possible price will be received for the company but rather that the price falls within a reasonable range of values.

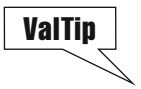
A fairness opinion typically is obtained by the board of directors of a company that is being acquired as part of its duty of care to its shareholders. The fairness opinion is an indication to the shareholders of the selling company that the company is not being sold at too low a price. Fairness opinions are not required by law or statutory authority. However, recent court decisions indicate that the courts look favorably on boards of directors that have obtained a fairness opinion as part of their fiduciary duty.

Prior to issuing the opinion, the financial advisor should meet with the board of directors or a special committee of the board to discuss the valuation analysis in detail, including all critical assumptions. This presentation is important from the board's standpoint, because it maintains full information flow during the fairness opinion process. It is important from the financial advisor's standpoint, because it can provide a forum in which to gain board input on key assumptions.

The fairness opinion usually is issued in a letter format, often with supporting exhibits. The analyses that are used to develop a fairness opinion are standard valuation methodologies, such as discounted cash flow analysis and market comparable analysis. Often the analysis is performed under many different scenarios to test the sensitivity of assumptions. However, the desired result of a fairness opinion is simply the opinion of the financial advisor that the transaction is "fair, from a financial point of view."

Pricing Analysis

A pricing analysis, used in negotiating a transaction purchase price, often takes the form of a detailed scenario analysis using a wide range of assumptions. A pricing analysis often encompasses valuing a business as is and valuing potential synergies of the combined firms.



In negotiating a purchase price, the seller would probably reject offers at or below the "as is" value to the current owners under existing management. The value of the target company combined with the potential value of the synergies of the combined entities is the most an acquirer should be willing to pay for the target. The actual purchase price should fall somewhere between these value points, depending on the bargaining strength of each party.

Conclusions

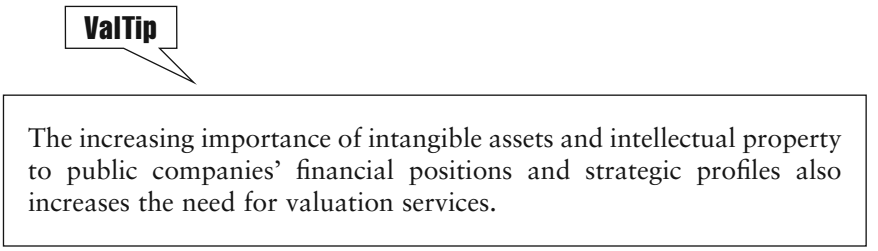
While valuations for mergers or acquisitions are similar in many respects to valuations for other purposes, it is the nature of a transaction that creates many unique valuation issues. The standard of value that is utilized for a transaction may vary with the purpose and assumptions included. The transaction may create value through synergy. The market may reflect a price premium for the acquisition which is more than just a premium for control. The FASB has recently issued new statements related to the calculation of purchase price and accounting for intangible assets and goodwill. Each of these issues is unique and should be considered carefully in a valuation for a merger and acquisition.

For additional information and topics see *Valuation for M&A: Building Value in Private Companies* by Frank C. Evans and David M. Bishop (New York: John Wiley & Sons, Inc., 2001).

B: VALUATIONS FOR PUBLIC COMPANIES AND/OR FINANCIAL REPORTING

The Changing Face of Public Company Valuations

There are over 10,000 publicly traded companies in the United States. Whether driven by financial reporting requirements, tax planning and compliance, transactions, management planning, or litigation services, these companies represent potential clients for business valuation analysts.



Asset price volatility and the proliferation of derivatives and other financial instruments similarly result in more valuation opportunities.

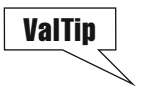
In addition, until recently, independent auditors assisted at will with fair value determination and other valuation assignments either directly or through in-house experts. However, the Securities and Exchange Commission (SEC) and the accounting profession have become concerned about the effect that providing valuation services may have on auditor independence. New independence standards have been issued and others are currently proposed. The most notable of these include the Independence Standards Board's (ISB's) Interpretation 99-1, "Impact on Auditor Independence of Assisting Clients in the Implementation of FAS 133 (Derivatives)" and the SEC's revision of auditor independence requirements.

On March 12, 1999, ISB Interpretation 99-1 was issued. Among other things, this interpretation states that, if the auditor computes derivative values, develops key assumptions or inputs used by the client, or provides a nonstandardized model that the client uses to value its derivatives, the auditor's independence may become impaired.

On November 15, 2000, the SEC voted to adopt new rules to modernize the requirements for auditor independence. Included in these rules is a prohibition against performing fairness opinions or valuation services when it is "reasonably likely that the results of these services, individually or in the aggregate, would be material to the financial statements, or where the results of these services will be audited by the accountant during an audit of the client's financial statements." While the effective date of this rule was February 5, 2001, the rule includes a transition period lasting until August 5, 2002 that allows auditors to provide these services without impairment of auditor independence as long as the services are not considered to impair independence under existing requirements of the SEC, the Independence Standards Board, or the U.S. accounting profession. The net effect of the rules, however, has been to reduce or even eliminate certain services provided by auditors to their attest clients.

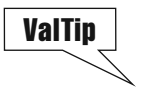
Major Reasons for Public Company Valuations

Financial Reporting Requirements



Unlike most other valuation assignments, the need for public company valuation services is often dictated by generally accepted accounting principles (GAAP).

The GAAP pronouncements state what type of assets and liabilities need to be valued, when they need to be valued, the standard of value to be utilized, and even, for certain assets/liabilities, the valuation procedures to be applied.



The standard of value used most often in financial reporting valuations is fair value. This is different from the "fair value" used in shareholder disputes.

In some cases, fair value is defined by an authoritative pronouncement from the FASB, the AICPA, and the SEC; in others, it remains undefined.

The most commonly used definition of fair value for financial reporting is the definition found in Statement of Financial Accounting Concepts (SFAC) No. 7. This statement defines fair value as "the amount at which [an] asset (or liability) could be bought (or incurred) or sold (or settled) in a current transaction between willing

parties, that is, other than in a forced or liquidation sale." This does not require a fair value estimate to be prepared by an independent valuation professional. The specialized knowledge that an independent valuation professional provides, however, can help management meet its business prudence requirement and keep corporate resources focused on managing the company.

ValTip

When engaged to provide an opinion regarding the fair value of a particular public company's assets or liabilities, it is important to confirm with the company's auditor the exact definition (and interpretation) of fair value to be utilized and to clearly identify which items are to be valued.

Exhibit 23.2 lists the classifications of engagements that may be performed for GAAP-related purposes and the major applicable pronouncements.

Exhibit 23.3 identifies the relevant sections of this book that discuss further the factors to consider and the methodologies to use in the valuation of these various assets (or liabilities).

The needs for GAAP-driven valuation work is expected to increase over the next few years. This is substantiated by the FASB-issued special report entitled *Business and Financial Reporting, Challenges from the New Economy* by Wayne S. Upton, Jr., issued in April 2001. The report concluded that improved business and financial reporting for the "new economy" will require attention to:

- Recognition of internally-generated intangible assets in financial statements and improved measures of those assets
- Expanded and systematic use of nonfinancial performance metrics
- Expanded use of "forward-looking" information

Tax Planning and Compliance

One of the most common business appraisal assignments results from federal or state income or capital gains tax planning or compliance and includes:

- Transfer pricing analyses
- Employee stock option valuations
- Purchase price allocations
- Built-in gains analyses

The tax valuation needs of an entity, whether public or private, normally are centered on tax compliance, deferral, or minimization. Regardless of which of these is the primary focus, often independent and objective business valuation services are an integral part of achieving the client's goal.

Transfer pricing analyses are governed by § 482 of the Internal Revenue Code (IRC). Specifically, transfers relating to intangible assets require the expertise of a valuation analyst to analyze the nature of the intangible assets and determine the

Exhibit 23.2 Accounting Pronouncements

Type of Engagement	Major Pronouncements
Purchase Price Allocations	APB Opinion No. 16 (superceded by SFAS 141 on June 1, 2001) APB Opinion No. 17 (superceded by SFAS No. 141 on June 1, 2001) SFAS No. 2 SFAS No. 86 SFAS No. 121 (superceded in part by (or additional guidance provided by) SFAS No. 142 on June 1, 2001 and SFAS No. 144 on August 1, 2001) SFAS No. 141 SFAS No. 142 FASB Technical Bulletin 84-1 FASB Interpretation No. 4 FASB Interpretation No. 6 SOP 98-1
Options and Derivative Instruments	SFAS No. 133 SFAS No. 137 SFAS No. 138
Employee Stock Options and ESOPs	SFAS No. 123 SOP 93-6 APB Opinion No. 25
Nonmonetary Transactions and Contributions-in-Kind	APB Opinion No. 29 FASB Technical Bulletin 85-1
Asset Impairment	SFAS No. 121/SFAS No. 144 SFAS No. 142
Quasi-reorganizations	APB No. 43
Transfers and Servicing of Financial Assets	SFAS No. 140

Source data: *Guide to GAAP 2001 edition*, Practitioners Publishing Company. (This table does not include a complete list of related pronouncements.)

most appropriate valuation methodology. Chapter 20 of this book addresses intercompany transfer pricing, including the relevant valuation methods.

Employee stock option valuations are as necessary for IRS purposes as they are for financial reporting purposes. Chapter 23I gives a detailed description of the different types of employee stock options, when they need to be valued, and the methods for valuing each type.

Exhibit 23.3 Types of Assets

Asset	Chapter
Intangible assets	20
Real estate	7
Machinery and equipment	7
Common stock	various
Preferred stock	23F
Debt	23E
Stock options and warrants	23I

ValTip

While a public corporation's traded stock has a readily determinable value and the company may have publicly traded options, distinct differences between employee stock options and publicly traded stock options influence their value. Also, corporations may grant employee stock options on shares that are not publicly traded, including shares in subsidiaries and shares with voting rights different from those of the publicly traded stock.

Tax-related purchase price allocations made up a large portion of the valuation engagements performed prior to 1993. Then came the Omnibus Budget Reconciliation Act of 1993, which introduced § 197 to the Internal Revenue Code. Instead of allocating the purchase price among various assets and asset categories and depreciating the value of the identifiable intangible assets over a demonstrated limited life, the Act reclassified most intangible assets as § 197 assets, which are written off over 15 years. This, however, did not eliminate the need for purchase price allocations for tax purposes. IRC § 1060 still requires that the seller and purchaser each allocate the consideration paid or received in a transaction among the assets bought/sold in the same manner as amounts are allocated under IRC § 338. Section 338 identifies seven general asset allocation classes:

Class I. Cash and cash equivalents
Class II. Actively traded personal property as defined in IRC § 1092(d)(1)
Class III. Accounts receivable, mortgages, and credit card receivables that arise in the ordinary course of business
Class IV. Stock-in-trade of the taxpayer or other property of the kind that would properly be included in the inventory of the taxpayer if on hand at the close of the tax year, or property held by the taxpayer primarily for sale to customers in the ordinary course of business
Class V. All assets not in Class I, II, III, IV, VI, or VII
Class VI. All IRC § 197 intangibles, except those in the nature of goodwill and going-concern value
Class VII. Goodwill and going-concern value

ValTip

In certain businesses, the lines are blurred between the intangible assets and income-producing real estate. Some examples include hotels, motels, hospitals, and skilled nursing centers. By performing a purchase price allocation, the analyst can separate intangible assets from the real property and the client can then amortize them over a much shorter life.

A corporate built-in gains analysis is a specialized valuation focused on determining the built-in gains in a company that has been acquired. Built-in gains can be associated with any asset, including intangible assets or investments in private companies. Built-in gains valuations are performed pursuant to IRC § 382, which allows a corporation to maximize its use of any net operating loss carryforwards acquired. In general, § 382 limits the use of net operating loss carryforwards and certain built-in losses following ownership change. The general limitation is that the net operating loss carryforward cannot exceed the value of the old corporation multiplied by the long-term tax-exempt rate. Any net unrealized built-in gain from the old corporation allows the new company to increase the § 382 limitation by the recognized built-in gain from that year. The analysis and execution of this type of engagement requires careful coordination with the company's tax advisors.

Management Consulting Engagements

The specialized knowledge and experience of a valuation analyst is also useful to corporate management in its general decision-making process. Often these consulting engagements use standards of value that differ from the traditional tax and accounting standards. For instance, investment value and intrinsic value may be relevant standards of value in management consulting engagements.

ValTip

Clients typically are not versed in the differences between these standards of value, so early communication and active listening are the keys to a successful engagement.

Exhibit 23.4 Valuations for Management Consulting

Engagement	Standard of Value	Typical Valuation Method or Approach	Chapter
Fairness Opinion	Fair from a financial standpoint to a particular party	Numerous	23A
Valuation of potential acquisition target	Investment value	DCF, Market	23A
Valuation of a division	FMV	DCF, Market	23A
Economic value added analysis	Investment value or FMV	DCF	23K
Strategic purchase consulting	Investment value	DCF, Market	23A
Solvency opinion*	N/A	Numerous	N/A
Royalty rate, fee analysis	Investment value or FMV	DCF, Transactions and Licensing	20

*The AICPA has restrictions on these services for CPAs.

Exhibit 23.4 outlines some of the various types of engagements that could be performed for management consulting purposes and the chapters of this book that discuss these engagements.

Litigation Services

Public corporations, due to their widespread operations, high visibility, and perceived "deep pockets," are targets for various forms of litigation. Many of these cases require valuation analysis as well as expert testimony. Among the potential sources of litigation are business interruption, wrongful termination, breach of contract, infringement of intellectual property rights, and wrongful death. Chapter 22 discusses litigation services engagements in further detail.

Summary

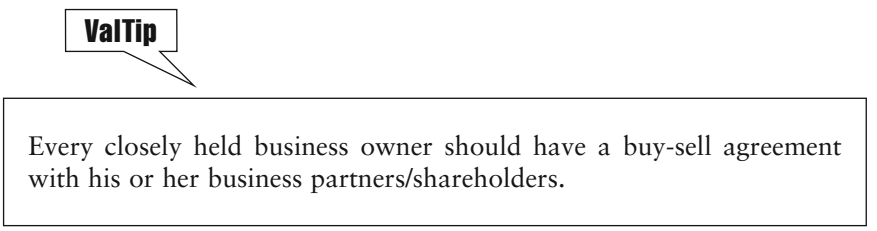
There are myriad reasons why public companies may require the services of a qualified business appraiser. Auditor independence issues and general business and economic trends both tend to increase the demand for these services. The business appraiser, when performing valuations for financial reporting purposes, should rely on the relevant GAAP pronouncements. These pronouncements typically state the standard of value to be applied (often fair value) and may even provide an outline of the valuation procedures to be followed. Tax valuations are all at fair market value. Other valuation engagements may require the use of other standards of value (i.e., investment or intrinsic value). For these valuations, the valuation professional must communicate early and often with management to ensure that the proper standard of value is used and that management realizes the effect the valuation standard may have on the conclusion reached.

C: VALUATION ISSUES IN BUY-SELL AGREEMENTS

The Importance of Buy-Sell Agreements

Buy-sell agreements are relevant to a discussion of valuation for two reasons:

1. Valuation analysts are uniquely qualified to assist clients and attorneys on constructing these agreements.
2. The existence of such an agreement may have an impact on the value determined in a valuation engagement.



It is surprising how many business owners fail to draft such an agreement when things are going well and their partners/shareholders are "in the mood" to reach an

amicable agreement. Furthermore, many owners who do have an agreement drafted may not understand the implications of the agreement that they have signed.

This becomes apparent when some highly stressful circumstance triggers the mechanisms provided in their agreements and they find they are negotiating stock buy-outs and prices or struggling over terms of the agreement that each owner thought they understood. These stressful circumstances might include:

- Owner in-fighting, that leads to one or more deciding to leave and wishing to be bought out
- Owner disability, and consequent need to be cashed out
- Owner death, and surviving owner needs to buy the stock from the estate
- Owner divorce, where the spouse, who is awarded half the stock, is demanding to be paid

ValTip

The battles that accompany these agreements often occur at a time when the company needs most to be projecting assurances to its employees and customers. This can disrupt operations and ultimately, serve to reduce the very value over which the owners are at odds.

Analysts are uniquely qualified to consult with clients and their attorneys before the buy/sell agreements are written. They can help the attorney understand valuation provisions and walk the business owner and the attorney through some of the landmines for the unwary, of which there are many.

Provisions of Typical Buy-Sell Agreements

A properly drafted buy-sell agreement that is clearly understood by all parties can be a critical tool in assuring the continuity of the company in the event of circumstances occurring like those mentioned previously. The agreement should establish the ground rules for the transition of ownership interests, including to whom the ownership interests can be sold, and how a price is to be determined. In many cases, this effectively provides a market for what might otherwise be an unmarketable asset. However, in most cases, such an agreement restricts the market for the stock to the company, other shareholders, bloodline relatives, and sometimes only to those who wouldn't jeopardize the company's S-Corporation election, if applicable.

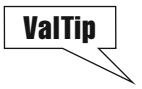
The buy-sell agreement may deal with how the sale of the stock is to be funded and paid for, thereby relieving financial pressure on the company or other parties buying the stock and providing a selling shareholder or estate of the decedent a mechanism for getting his or her money.

Buy-sell agreements often contain employment clauses, requiring the selling shareholder to work for some period of time after sale of his or her ownership interest. They may also include noncompete clauses, which are designed to prevent the departing shareholders from competing with the company for a specified period after they leave.

The agreement may address continuity of management in the event that a shareholder is to leave, providing for the smooth, continued care of the company and its operations during the transition period.

The agreement may address specific management issues, such as control over various decision-making responsibilities, and authority and intentions regarding distributions to shareholders. Such clauses are particularly important to noncontrolling shareholders who may have no input over such matters.

Many agreements set forth a mechanism for the resolution of disputes among the parties. There has been an increasing trend toward the use of arbitration or mandatory mediation, both of which can serve to significantly reduce costs and provide a framework for a more mutually agreeable solution to the dispute.



A buy-sell agreement can set the ground rules for any matter the owners want to include. For this reason, there is no "one size fits all" when it comes to shareholder agreements. An owner who signs a "cookie-cutter" buy-sell agreement is practically assured of disagreement and misunderstanding down the road. If you have seen one buy-sell agreement, you have seen one buy-sell agreement.

Valuation Aspects of Buy-Sell Agreements

Types of Agreements

There are three types of commonly used buy-sell agreements:

1. Repurchase agreements, in which the company redeems the stock of the departing shareholder
2. Cross-purchase agreements, in which the remaining shareholders are given the option to buy the stock of the withdrawing party
3. Hybrid agreements, in which either the company or the other shareholders are offered the stock of the departing shareholder first, and the other party has a second option on the stock

Most agreements are structured as hybrids, leaving the shareholders more flexibility in how they structure the deal at the time of the triggering event. The option chosen will be influenced by considerations such as how the payment will be funded, the number of parties to the agreement, and tax issues.

The various selling provisions can be either exercised at the option of the purchaser, or be binding (i.e., a "put" option). The greater the selling restrictions, the greater the possible impact on any lack of marketability discount and/or lack of control discount. If the provisions provide for a purchase at the option of the buyer, (the company or the other shareholders), and the buyer declines, then the shareholder is generally permitted to find an outside buyer who meets various criteria and restrictions established in the agreement. In fact, many agreements require a shareholder wishing to sell to find an outside buyer first, and then offer the stock to the com-

pany or other shareholders at the same price that the outside buyer is willing to pay. Unfortunately, this often serves to severely restrict the chances of a sale, and the price that might be paid, since few serious investors are willing to go through the exercise of due diligence and preparing an offer with the knowledge that their offer will likely be usurped by another party.

Valuation Clauses

Perhaps nothing is as great a surprise to many shareholders as it is to realize the implications of the valuation clauses in their agreement, particularly if this realization occurs during a triggering event. For instance, a selling shareholder may suddenly realize that the payment he or she is to receive is far less than anticipated, or a buying shareholder may find that the acquisition price may appear unreasonable because it is far in excess of their expectations and what they think the cash flow of the business can support.

ValTip

Most disputes that arise as a result of a triggering event do so because the agreement is either unclear or misunderstood by the parties involved. Unfortunately, this is also the worst time to try to resolve such a dispute; better to be in the position of making these decisions when the parties are amicable.

Such mishaps are often the result of neglecting to meticulously craft the valuation section of the agreement. Again, the valuation analyst is ideally suited to assist the attorney and client in understanding this all-important section.

Standard of Value

Perhaps nothing is as important in the valuation section as it is to clearly define the standard of value to be used in the agreement. This single item is perhaps the most overlooked aspect of drafting the agreement, yet it is fraught with the greatest dangers for the parties involved.

The parties can agree to the use of any standard of value they wish. However, the failure to clearly define the standard of value can create some serious problems. Consider the following examples:

- Shareholder A is ready to cash in a 1/3 interest in the business. All the shareholders agree that the company is worth $1,000,000, so Shareholder A believes he is due a payment of $333,333. What Shareholder A has failed to realize is that the standard of value for company stock is the "fair market value" of the interest. Their interest will need a fair market valuation that may include a discount for minority interest and/or lack of marketability. This will yield a much smaller payment than Shareholder A had expected.
- Shareholder B owns 50 percent of a business that is in a rapidly growing industry. Shareholder B wants to sell out to Shareholder A, and the terms of the buy-sell agreement specify that the stock is to be offered in a cross-purchase

arrangement for "value." Shareholder B knows that consolidators have been paying 3 times revenues for comparable businesses and expects the price for the shares to be calculated using the same multiple, since they believe it is representative of "value." However, Shareholder A knows that the only way the company's cash flow could support such payment is if the entire company is sold, which they do not want to do.

Both of these examples are common scenarios that inevitably lead to conflict and disruption of the business. Both situations could have been avoided if the parties had realized the meaning of the terminology used in the agreement, or had avoided using ambiguous terminology, such as "value." The standard of value should be both named and defined in the agreement to prevent a misunderstanding among the parties at a later time.

Analysts are well equipped to explain the alternatives and meanings of the different standards of value. By helping the shareholders through the process of deciding what their intentions are with respect to one another, analysts can help them select the standard of value that meets that intention, and that will be financially feasible should a triggering event occur.

Approaches to Valuation

Value under a buy-sell agreement is typically determined one of three ways:

1. By use of a formula
2. By a process that is defined in the agreement
3. By negotiation among the parties

Formula Approaches. Formula approaches are often used, but seldom appropriate. Agreements often contain formulas that were developed because the parties thought they were easy to understand and use.

Rarely do formulas result in "easy" solutions when the time comes to put them into practice.

A formula that produces a fair valuation at the time an agreement is put in place will probably not result in a fair valuation two, five, ten, or twenty years down the road. Factors about the company, the industry, competition, suppliers, the economy and general market conditions rarely stay static, and a static valuation formula may fail to capture those changing conditions.

Process Defined in the Agreement. A far better alternative is for the parties to agree on a process by which the value will be determined. This is really the only way that the parties can be assured that the valuation will take into consideration the current value of the stock using whatever standard of value the parties have agreed to.

Some buy-sell agreements require the company to obtain an annual appraisal so that the parties are kept aware of the value of their holdings. Although ideal, it is a costly alternative. A reasonable solution for some companies is to have a complete valuation done only periodically, with update letter reports done in-between.

Problems occur with such arrangements when the company fails to obtain the annual valuation and a triggering event occurs. Unfortunately this is an all-too-common scenario. However, it can be avoided if the agreement includes a "fall back" provision directing the shareholders to obtain a valuation as of the date of the triggering event. In fact, some buy-sell agreements require the valuation to be done only at the time of a triggering event.

The agreement should also include a mechanism for choosing a valuation analyst. It might stipulate a particular analyst to be retained by the company. An alternate should be named as well in the event that the first choice is not available.

Alternatively, the agreement might require the selling shareholder to obtain a valuation, and the company or acquiring shareholder to do the same. If this is the case, then a mechanism needs to be put in place to deal with differences in the two valuations. This might involve shareholder negotiations, or hiring a third analyst to review the first two valuations. Some agreements stipulate that the results be averaged, but this may not be a good alternative if the parties desire to reach a meaningful representation of value.

Finally, the agreement might require the departing shareholders to obtain a valuation at their expense. However, the agreement also will need to provide a means to handle potential disagreement by the company over the departing shareholder's valuation conclusion. Some agreements require the valuation to be done by the company's CPA firm. Although this might initially make sense to the shareholders, the CPA firm may not necessarily be qualified to perform valuation services.

Negotiation. If the agreement does not provide any mechanism for valuation, an acceptable alternative may be an annual documented negotiation between the parties. If negotiation is left until a triggering event, it may be harder to reach a satisfactory conclusion.

Another method of negotiation is a "show-down" clause. This type of clause requires shareholders who want to withdraw to offer their stock to the other shareholders for a specified payment and term arrangement. The shareholders to whom it is offered then have the opportunity to either buy or sell the stock at the same payment arrangement proposed by the departing shareholder. Supposedly, this assures fairness since the departing shareholders do not know if they will be selling or buying shares.

Show-down clauses need to be structured with great care because they can create unfairness which they are supposed to avoid. For example, if the selling shareholder is an insider who owns 80 percent of the stock, and the remaining shareholder is an outsider who owns the other 20 percent, the insider stockholder probably has better knowledge of the company and possibly greater financial means to consummate the buy out of the remaining shareholder. The outsider has neither knowledge of the company, nor the means to buy a large majority interest. In this case, the "showdown" clause may amount to little more than a squeeze-out of the minority shareholder.

Whatever the valuation arrangement, clarity up front can save long, costly battles that only serve to hurt the parties and the very company that the agreement is designed to preserve.

Terms. Just as an effective buy-sell agreement must call for an appropriate manner of valuing the stock, it must also address the issue of terms. Just like any stock deal, terms can be anything the shareholders agree to.

The buyer of the stock, be it the company or the other shareholders, will typically prefer a payment stream over a number of years to help with their on-going cash flow. The departing shareholder, on the other hand, would like to get all the cash up front. A deferred payment arrangement necessarily leaves them subject to some risk that the company or the other shareholders will perform and be able to make good on the payment arrangement.

To the extent that payments are deferred, the selling shareholder will usually require some form of collateral, either in the form of the stock that is the subject of the sale, other assets of the company, or assets of the acquiring party. Personal guarantees may be required as well. In a deferred payment arrangement, the selling shareholder is being put in the place of a creditor. As such, the seller will likely require the same assurances that the bank, or other outside creditors, would require. Typically, when collateral is assigned, the departing shareholder will be in a position second to the bank.

The buyer and seller will also need to agree to the allocation of the price to be paid. For example, the payment might be only for the stock, or a portion of the price might be allocated to a covenant not to compete, or perhaps to an employment or ongoing consulting arrangement.

Whatever the payment terms, there are varying tax implications to both the buyer and the seller. All parties to the agreement should understand the tax implications of the agreement.

Financing. All of the good efforts and intentions stated by the shareholders in the buy-sell agreement will be wasted if a realistic funding plan has not been addressed. Many times, shareholders believe that because they have the right of first refusal and the corporation has second (or vice versa) before a shareholder who wishes to depart can sell the shares to an outsider, that they are "safe" from allowing such outsiders in the company. However, if the buyout cannot be consummated by the corporation or the other shareholders because of lack of funding, then that protection the shareholders relied on is lost. Funding can come from any number of sources, including operations or borrowings against corporate or personal assets.

Many agreements require the parties to carry life insurance to fund the purchase upon the death of a stockholder. If it is a redemption agreement, the corporation will hold life insurance on the lives of the shareholders. If it is a cross-purchase agreement, the shareholders will hold policies on each other's lives. However, in cases where there are multiple shareholders, cross-purchase insurance can become cumbersome and costly. Such considerations may cause the parties to more carefully consider a redemptive agreement instead.

Occasionally, the parties carefully structure a buy-sell as a cross-purchase arrangement, or leave the option open for either a cross-purchase or a redemption, but then unwittingly buy a corporate policy on the lives of the shareholders. The company then ends up receiving the insurance proceeds, but it is the shareholders

who need the money. This can end up being a costly mistake, or cause the manner in which the insurance is held to be the driving factor in the decision of whether to accomplish the buy-out via a redemption or a cross purchase. The parties should be advised by both their tax and insurance consultants on the issues relative to each type of insurance.

Section 2703 of the Internal Revenue Code

Section 2703 of the Internal Revenue Code sets forth rules that apply generally to transfers of family owned businesses among family members, occurring after October 8, 1990. A business is considered a family business if family members control 50 percent or more of the vote or value of the business. Section 2703(a) states that a shareholder agreement among family members that allows for the acquisition or transfer of property at a price that is less than fair market value will be ignored for purposes of mitigating estate and gift taxes.

With respect to buy-sell agreements, Section 2703 provide that such agreements will be ignored unless they meet three tests:

1. They are bona fide business arrangements.
2. They are not devices to transfer property to family for less than full and adequate consideration.
3. The terms of the agreement are comparable to similar arrangements entered into by persons in an arm's-length transaction.

ValTip

If a buy-sell agreement entered into after October 8, 1990 contains a clause that would value the stock at less than fair market value, it will be disregarded for tax purposes.

Agreements that were drafted before October 8, 1990, and have not been substantially modified since that date are considered exempt from the application of Section 2703(a). Such agreements are subject to the old rules.

"Substantial modification" is considered to be any discretionary modification of a right or restriction that results in anything other than a de minimis change to the quality, value, or timing of the rights of any party subject to the agreement, and includes all family members below the lowest generation that is already a party to the agreement.

Impact of Buy-Sell Agreement on Valuation

The existence of a buy-sell agreement may have an impact on the value of the company. The magnitude of the impact will depend on the terms of the agreement, including transferability restrictions that may affect a lack of marketability discount for a minority interest.

The magnitude of the impact of a buy-sell agreement on the valuation may also depend on the purpose of the valuation. For example, whether or not a buy-sell

agreement will be controlling for purposes of divorce valuation depends on the statute and case law of each state. Some states consider the buy-sell value controlling, while others disregard it entirely.

ValTip

Shareholders who have signed agreements that value the company's stock at something less than fair market value may find themselves in the unfortunate position of having transferred the stock for the price set by the agreement only to find that the IRS values it at something greater. This may result in an unexpected tax liability.

When preparing an appraisal for estate or gift tax purposes, the analyst needs to consider whether a buy-sell agreement exists, when it was drafted, if it was drafted before October 8, 1990, whether it has been substantially modified, and whether it meets the related requirements.

Summary

Buy-sell agreements present both planning opportunities for analysts, and an area that needs to be considered for its valuation impact. Analysts are in a unique position to provide consulting services that go beyond the preparation of the valuation, by providing valuable advice on the shareholders' agreement while it is being drafted.

D: VALUATION ISSUES IN PASS-THROUGH ENTITIES

Introduction

A pass-through entity is defined as any type of business entity that passes its earnings on to its owners without taxation. Taxes on the earnings of the entity are paid on the owners' tax returns as opposed to the entity's tax return. As a result, double taxation, first on entity earnings and then on the distributions of those earnings to the owners, is avoided. This chapter focuses mainly on S corporations, although many of the issues are also considered in other pass-through entities.

Types of Pass-Through Entities

Pass-through entities include sole proprietorships, partnerships, trusts, joint ventures, limited liability companies (LLCs), and S Corporations. A sole proprietorship is generally the simplest business structure, owned and operated by a single person who is considered the equivalent of the company. Any business profit or loss passes from the business to the sole owner and is taxed at the sole owner's personal tax rates.

Two individuals or entities form a partnership. The earnings of any partnership "flow through" to the partners and are taxed on the partners' tax returns based on each respective partner's ownership interest.

ValTip

The valuation analyst should read the partnership agreement for the specific legal rights and responsibilities assigned to individual partners, be generally familiar with state law, and, if needed, consult with the entity's legal counsel regarding interpretation of the document and state law.

A limited liability company's owners are referred to as members. Again, the earnings of the company "flow through" to the individual members, who are taxed on them at their rates on their own income tax returns. Two of the advantages of an LLC over an S corporation are that it may issue more than one class of ownership and that the member agreements are very flexible.

S Corporations

An S corporation must meet several tax and legal requirements to achieve and maintain S-election status. These requirements include:

- An S corporation can be made up of no more than 75 shareholders, all of whom must be U.S. citizens or residents of the U.S.
- The shareholders of S corporations must be individuals, estates, certain trusts, and other S corporations.
- Unlike limited liability companies, S corporations can issue only one class of stock

The primary advantage of an S corporation over a C corporation is the tax savings it achieves. The earnings of an S corporation "flow through" to the shareholders and are taxed at the shareholders' tax rates on their own income tax returns, while C corporation earnings are first taxed at the corporate level and then taxed again at the shareholder level, when received as dividends.

The S corporation often makes a distribution to at least cover the taxes that are owed on corporate earnings by the individual shareholders. It is also not subject to accumulated earnings or personal holding company taxes as are C Corporations.

Exhibit 23.5 is a simplified example of the tax savings that can be gained from S-election status.

In an entity where less than 100 percent of the earnings are distributed, the shareholder of an S corporation would not have the same level of savings as shown in Exhibit 23.6.

The point at which it becomes disadvantageous to be an S corporation rather than a C corporation occurs when the company does not distribute its earnings and the net current tax savings to the individual shareholder become negative (i.e., the shareholder does not have enough money to cover the current tax liability). However, S corporation profits that are retained will increase the shareholders' basis in their stock. Therefore, upon future sale of the company, this increase in stock basis will reduce the capital gains the shareholders will have to recognize at that time.

Exhibit 23.5 Tax Savings

Assumption: 100% earnings distributed

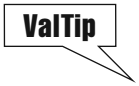
Form of Entity	C Corporation	S Corporation
Pre-tax profit	$200,000	$200,000
Corporate tax at 34%	68,000	0
Profit available after corporate level taxes	132,000	200,000
Earnings retained	0	0
Distribution to owners	132,000	200,000
Personal tax at 39.6%	52,272	79,200
Profit available after personal taxes	$79,728	$120,800
Net Savings as S corporation	$41,072	
	or 34% of total C corporation taxes	

Exhibit 23.6 Tax Savings

Assumption: 50% earnings distributed

Form of Entity	C Corporation	S Corporation
Pre-tax profit	$200,000	$200,000
Corporate tax at 34%	68,000	0
Profit available after corporate level taxes	132,000	200,000
Earnings retained	66,000	66,000
Distribution to owners	66,000	134,000
Personal tax at 39.6%	26,136	79,200
Profit available after personal taxes	$39,864	$54,800
Net Savings as S corporation	$14,936	
	or 16% of total C corporation taxes	

Another potential disadvantage to electing S corporation status (if currently a C corp) lies in the built-in capital gains tax that becomes due on the sale of the assets. Any gain on the sale of assets that occurs within 10 years of the S election is taxed to the corporation as if the asset were purchased on the date of the S election. Thus, capital gains tax is paid at the corporate level and the shareholders pay tax on the subsequent flow-through income, resulting in double taxation. This effect is mitigated somewhat by the individual shareholders' ability to claim a deduction for the amount of corporate tax paid.



When a company converts from a C corporation to an S corporation, often a business valuation is needed, particularly if a sale of company assets is expected within 10 years of S election. The valuation serves as a baseline for calculating trapped-in capital gains.

Valuation Issues

The Valuation analyst faces two primary issues when valuing a pass-through entity:

1. Do the tax advantages of the entity create additional value for the company?
2. If so, how is that additional value captured?

Although there have been some very recent studies, there is no generally accepted empirical evidence to prove that pass-through entities sell at a higher price than taxable entities. Nevertheless, some analysts believe that they should be worth more because of the tax savings. There are some key considerations in answering these two questions. The first consideration is the purpose of the valuation. Just like an appraisal of any non–pass-through entity, the analyst first needs to determine the purpose of the appraisal and, subsequently, the appropriate standard of value and the ownership interest being valued.

Is the purpose for estate and gift tax planning, divorce, sale or merger, or shareholder dissension? Is the standard of value fair market value, fair value, or investment value? Is the interest being valued a minority or control interest? The answer to each of these questions influences how the S corporation interest is treated in the valuation. The standard of value impacts the resulting value no matter what type of entity is being valued. These questions need to be answered in the valuation of any entity type; they are not specific to pass-throughs, but they must be understood before further valuation issues can be digested.

Let us look at the difference in two particular standards of value: fair market value and investment value.

Revenue Ruling 59-60 defines "fair market value" as "the price at which the property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts." One of the implications of this standard of value is that it includes value to a hypothetical financial buyer and may be stated on a cash or cash-equivalent basis. The question often answered in arriving at fair market value is: What purchase price can the cash flow support?

"Investment value" is understood as value to a particular investor based on individual investment requirements and attributes. Whereas "fair market value" is value to the whole universe of buyers with no consideration of the characteristics of any of those individual buyers, "investment value" involves value to a specific buyer. The fundamental difference in these standards of value lies in the perception of potential future earnings power and risk.

ValTip

The issue of whether to deduct corporate-level taxes is heavily disputed among valuation analysts and among the ranks of IRS valuation analysts. In fact, the IRS often has rejected any deduction for corporate taxes in direct violation of its own valuation guide, which clearly states that corporate-level taxes should be deducted.

Perhaps the most significant question the valuation professional needs to answer to address these primary issues is how the company's pass-through structure affects historical as well as future projected cash flow. Should taxes be deducted from cash flow? If so, what level of tax is appropriate? Although the remainder of this discussion focuses on S corporations, the same issues are relevant for other types of pass-through entities.

"S Corporations lend themselves readily to valuation approaches comparable to those used in valuing closely held corporations. You need only to adjust the earnings from the business to reflect estimated corporate income taxes that would have been payable had the Subchapter S election not been made."[9]

The issue of whether to deduct taxes is also important in divorce valuations and in valuations prepared in contemplation of the purchase of a business or business interest. In short, it can be an issue in almost any valuation.

The following sections focus on the deduction of taxes under a fair market value standard rather than an investment value standard.

Deduction of Taxes Under a Fair Market Value Standard

ValTip

In the determination of the cash flows of a business under a fair market value standard, considerable case law exists to support the concept of considering the entire pool of hypothetical buyers.

In the *Estate of Samuel Newhouse,*[10] the court stated that the valuation professional "need not identify exactly who the buyer would be or even what class of investors the buyer would belong to. The 'willing buyer' is supposed to be a hypothetical amalgam of potential buyers in the marketplace." (*Estate of Bessie I. Mueller,* T.C. Memo 1992-284.)

The "entire market" is made up of buyers who would be eligible, and buyers who would be ineligible, for the S election. Many analysts take the position that were the subject business to be sold, the likely buyer would be a C corporation or other ineligible entity. A C corporation buyer would most certainly include the corporate-level taxes of the acquired subject as an expense of the corporation and part of the calculation of future cash flows. Therefore, for valuing a controlling interest in an S corporation, taxes would be deducted from cash flows.

The issue is less clear in the case of valuations of minority interests. A minority shareholder could not affect a change in the company's tax structure, except to the

[9] *IRS Valuation Training for Appeals Officers Coursebook* (Chicago, IL: CCH Incorporated, 1998), p. 7–12

[10] *Estate of Samuel Newhouse,* 94 T.C. 193 (February 28, 1990).

extent that the shareholder would be able to sell the interest to a party who was ineligible to be a shareholder in an S corporation. If such a case were likely, and the S election was to be terminated as a result of such sale, then corporate-level taxes may need to be deducted.

The shareholder agreement often contains restrictions regarding whom the shares can be sold to, thereby ensuring the continuity of the S election. Many shareholder agreements require the stock of any shareholder wishing to sell stock to be offered to the corporation or to the other shareholders first. Some agreements limit the sale to only shareholders who would themselves be eligible for the S election. A deduction for taxes at the corporate level needs to be justified.

An example of this tax issue is *Estate of Gross v. Commissioner*.[11] This case dealt with gifts of minority interests, each 0.63 percent of the total stock outstanding of the corporation. The Findings of Fact and Opinion of the court stated that:

> In 1982, G&J elected to be taxed as a small business corporation . . . [and] the shareholders of G&J agreed to maintain G&J's status as an S corporation for at least 10 years. G&J, in fact, maintained its S corporation status through July 31, 1992,[12] the date of the valuation that is the subject of this case, at which time there were no plans to change its S corporation status. The Gross family restrictive transfer agreement contained express provisions to prevent termination of G&J's S corporation status.

The logic here was that a hypothetical buyer of a 0.63 percent interest in the corporation would be unable to change the tax status of G&J. Indeed, such an interest could not even be sold to an eligible buyer. Therefore, the stated tax benefits can continue to accrue to the holder of such minority interest.

Further, the issue of continued distributions by the company is relevant to an acquirer of a minority share. The buyer of a 0.63 percent interest would assume that the current controlling owners will stay in place and continue their established distribution policy. The price to be set for this minority interest therefore will take into consideration such a stable ongoing cash flow stream. See Chapter 24 and 13 for additional information on *Gross*.

ValTip

The IRS may take the position, as in *Gross,* that corporate-level taxes are not to be deducted in valuations of S corporations under any circumstances. However, many analysts agree that, in many cases, the strict guidance set forth in *Gross* should not apply.

[11] *Estate of Gross v. Commissioner,* 78 T.C. Memo 201 (1999), T.C. Memo 1999-254.
[12] July 31, 1992 is the date of the valuation that is the subject of the case.

Reduction of Taxes Under an Investment Value Standard

An investment value standard is used in many settings, including mergers and acquisitions, when the buyer is a specific individual rather than a hypothetical person. It is also the standard for divorce valuations in several states, where the "hypothetical buyer" is replaced with the "current marital community."

Whoever the specific "buyer" may be, the analyst knows in advance whether he or she is eligible to be a shareholder in an S corporation. If the buyer is eligible and the corporation will retain its S election, taxes may not be deducted. If the buyer is ineligible and the corporation loses the S election, taxes may be deducted.

Level of Taxes to Be Deducted

Once the decision to deduct corporate-level taxes has been made, the next question is to determine what level of taxes is to be deducted. Although some analysts believe individual tax rates should be used, the hypothetical buyer, ineligible for the S election, would clearly be forced to pay tax rates at the corporate level, not the individual level. Thus, to the extent that taxes are calculated, they usually should be based on corporate tax rates.

The IRS may take the position that the extent of the tax deducted should be based in part on the amount of distributions actually made by the company. For the valuation of an entire business or controlling interest, this issue is irrelevant, since a fair market value standard may lead the analyst to treat the company as a C corporation.

For minority interests, however, the issue is less clear, since the benefit of not having to pay corporate-level taxes increases value to the minority shareholder only to the extent that distributions are made. Thus, for a corporation that distributed all of its earnings (*Gross*), the full benefit of being an S corporation are enjoyed (at least currently) by the owners. In such a case, the IRS probably would argue that no taxes should be deducted. However, for a corporation that makes no distributions, there is no difference in the value to a C versus an S corporation shareholder (S could actually be lower based on this fact alone). In that case, presumably the counter-argument would be that full C corporation taxes are deductible. This argument is troubling, for if no distributions are being made, then the analyst should not be asking whether the minority interest has any value at all, but for what residual value there may be somewhere down the road if the company ultimately were to be sold.

ValTip

For companies that distribute only part of their profits, ultimately, the reality of settlements with the IRS is that they attempt to meet the taxpayer "somewhere in the middle." However, as analysts, we should be looking to the economic reality of the interest being valued.

Risk Perception for the Pass-Through Entity

Often greater risk is perceived to exist in a pass-through entity. Banks tend to be more careful in lending to S corporations because of their distribution policies. They often include loan covenants that address this. Capital sources for pass-throughs often are more limited due to the limitations on the number of investors.

In addition, the amount of earnings that have been distributed historically and are expected prospectively is important. If there have been significant distributions in the past, but they are not expected to continue, there is an increased personal tax liability for the shareholder, thereby reducing the cash flow available to an investor and, by extension, reducing the investor's actual rate of return on the original investment.

Impact of Entity Structure on the Discount for Lack of Marketability and Discount Rates

A lack of marketability discount typically is applicable for a closely held company with no readily available market for its securities. However, pass-through entities have several attributes that could cause this discount to be higher or lower than it would be for a C corporation.

If the pool of buyers for a minority interest in pass-through entity stock is limited by S-election restrictions, the discount could be higher. However, some S corporations distribute virtually all of their earnings, which puts more cash in the pockets of investors and leads to greater return on investment. This factor could lower the discount for lack of marketability. Situations in which there are profits but no distribution would support a higher discount.

Rates of return or discount rates for S corporations can be prepared on a pretax or an after-tax basis. Some analysts tax effect the S corporation earnings, then apply a traditionally derived after-tax discount rate. Others use pretax earnings or cash flow, then apply a pretax discount rate.

Both of these methods result in an after-tax value, if the pretax rates are derived from after tax data specific to tax-paying entities.

Some analysts also increase the discount rate to reflect possible regulatory changes or possible changes to distribution policies in the future by the controlling shareholder.

Some analysts use a hybrid model, which reflects an interim period of pretax cash flow followed by a hypothetical sale of the company to a tax-paying entity in the terminal year with an applicable tax reduction in the terminal-year cash flow that is capitalized into perpetuity.

Summary

Although the process of valuing pass-through entities is very similar to the process of valuing C corporations, the valuation issues can be very complex and require valuation analysts to use professional judgment on a case-by-case basis. The primary advantage of being a pass-through entity is the potential tax savings available to the shareholders. From a valuation perspective, the analyst, at a minimum, needs to be aware of the issues that exist with regard to the taxation of pass-through entities. Knowing the purpose of the valuation and determining the appropriate standard of value and the level of interest being valued will set the backdrop against which the issue of taxes and the impact on cash flows can be determined.

Articles Addressing S Corporation Valuation Issues

Summaries of various articles that have addressed S corporation valuation issues, including points of view with regard to tax-effecting these entities, follow.

Sidney R. Finkel, "Is There an S Corporation Premium?" *Valuation Strategies* (July/August 2001), pp. 16–27.

This article addresses key factors that should be considered in determining whether an S corporation has more value than a C corporation. Those factors include consideration of restrictions on S corporation shareholders, dividend policy, and the structure of asset sales versus stock sales. Of key consideration in the valuation of S corporations is whether or not an S corporation's earnings should be tax-effected. The article takes the position that for valuation purposes, an S corporation should be tax-effected if the most likely pool of willing buyers are *not* eligible S corporation shareholders and, in the absence of the S designation, the subject company would suffer from dual taxation of dividends.

Bruce A. Johnson, "Tax Treatment When Valuing S Corporations Using the Income Approach," *Business Valuation Review* (June 1995), pp. 83–85.

This brief article lays out four current philosophies for the tax treatment of earnings with regard to S corporations and proposes a fifth method of how to capture the value of an S corporation through its cash flow stream. Briefly, the first four methods are:

1. Tax-effect the earnings of an S corporation at C corporation rates, discount/capitalize the resultant earnings stream but add a 10-15 percent premium to the final value.
2. Tax-effect the earnings of an S corporation at the personal rate and discount/capitalize the resultant earnings stream.
3. Tax-effect the earnings of an S corporation at the corporate rate and discount/capitalize the earnings stream.
4. Do not tax-effect the earnings of an S corporation and discount/capitalize the resultant earnings stream.

The author's proposal is to start with method 4 and to tax-effect only the personal taxes on the *reinvestment* into the company. Reinvestment is defined as depreciation and amortization less capital expenditures less additional working capital plus new debt less payments on existing debt. The theory underlying this proposal is that S corporation shareholders must pay taxes on all pass-through income, even though some of that income is reinvested into the company. Essentially, the benefit to an S corporation shareholder is the net cash flow less the personal taxes on the reinvestment to the company.

Donald C. Wiggins, S. Mary Hand, and Laura L. Coogan, "The Economic Impact of Taxes on S Corporation Valuations," *Business Valuation Review* (June 2000), pp. 70–79.

This article discusses what it characterizes as the extreme positions taken in the treatment of tax-effecting S corporations. One view is to not tax-effect the S corporation at all. The other view is to fully tax the S corporation at the C corporation level. The authors do not support either view but take a more middle ground perspective. The theory is that since "the economic tax burden to an S corporation is the tax that it pays on enough pre-tax income to net the amount necessary after tax to reinvest through retaining earnings to support growth," an S corporation's earnings stream should be tax-effected only to the extent of its reinvested portion of the cash flow. The authors believe that the use of a tax burden on reinvestment is the only way to capture the true economic advantage of an S corporation. This also supports the notion that owners of S corporations often know that they do not have access to all of the income generated from S corporations on which they are taxed.

Leonard Sliwoski, "Reflections on Valuing S Corporations," *Business Valuation Review* (December 1998), pp. 141–145.

This article states that there are two avenues for consideration in the valuation of S corporations:

1. Adjust the capitalization or discount rate to a pretax rate or posttax rate, depending on where the appraiser wants to end up.
2. Capitalize or discount a level of cash flow that has been adjusted for the peculiarities of S corporations.

The income stream can be adjusted by tax-effecting it like a C corporation, tax-effecting at an individual's personal tax rate, not tax-effecting it at all, or utilizing the S corporation "net cash flow" as a basis for discount/capitalization. The author believes that this last option is the only one that gives true consideration to the peculiarities of the S corporation. This option considers the cash flow available to an S corporation shareholder before payment of shareholder income tax expense, but after tax-effecting cash reinvested for working capital and fixed assets as an S corporation shareholder would have to pay for these items. This last option assumes that the buyer of an S corporation is willing to pay for the subject S corporation's ability to generate cash flow and is qualified to continue to run the company as an S corporation.

The author believes that S corporations should be tax-effected at C corporation rates. The market does not always work on sound economic principles. Hypothetical buyers have not been motivated to pay substantial premiums for S cor-

poration income tax elections. The author therefore believes that S corporations should be fully tax-effected at C corporation rates for valuation purposes.

Conclusion

To tax-effect or not to tax-effect an S corporation's and other pass-through entities' earnings? As can be gleamed from the articles reviewed, the opinions are varied. However, the one message that seems clear is that the analyst needs to consider the facts and circumstances of each company separately to determine what level of taxes, if any, should be applied to the subject S corporation earnings. See Chapter 3 and Chapter 24 for further discussion and viewpoints on S-Corps.

E: VALUING DEBT

Introduction

Generally defined, a fixed income security (e.g., debt and preferred stock) is a financial obligation of a borrower to repay a specified sum of money at a predetermined future date to a lender. The terms and characteristics of such obligations, particularly debt obligations, vary greatly based on the lender's (creditor's) and borrower's (issuer's) respective expectations and needs.

Features of Debt Securities: Basic Overview

Types of Debt

Debt obligations include bank loans, bonds, accounts payable, mortgage-backed securities, asset-backed securities, and unsecured promissory notes. Bank loans are the most common form of debt taken on by closely held companies. As methods of financing corporate activity evolve, companies are entering into increasingly diverse forms of debt contracts.

Covenants

The covenants of a debt contract are clearly outlined in the loan agreement, also known as the indenture. Affirmative covenants are promises the borrower agrees to keep. The most common example of an affirmative covenant is the promise of the borrower to make principal and interest payments to the lender on a timely basis. Negative covenants are restrictions and limitations on the borrower's activities. Most negative covenants prohibit the borrower from altering its capital structure by taking on new debt, outside of certain parameters.

Par Value

Also known as the face value or maturity value, the par value of a debt security (bond) is the amount that the borrower promises to repay the lender by the maturity date. Bonds can carry any par value, and the current market value of the bond is quoted as a percentage of its par value. For example, if a bond with a par value of $1,000 is selling for $975, it is said to be "selling at 97.5." This bond is trading

at a discount since it is selling below its par value. Conversely, a bond selling above par value is said to be trading at a premium.

Maturity

The term to maturity, the number of years over which the borrower has promised to meet its obligation, is critical to the valuation of debt securities for three primary reasons.[13]

1. The term to maturity indicates the point in time at which the borrower must have the full principal amount paid and indicates the time over which the borrower can expect to make interest payments. This information provides a basis for preparing forecasts for using the income approach.
2. The term to maturity has an influence on the offered yield on a debt security. If a borrower desires a longer payoff period, it is likely that the borrower will have to pay a higher rate of interest, which also will have an impact on cash flow.
3. Finally, the volatility of the price of a debt security often depends on its term to maturity. Long term to maturity periods typically have greater volatility in price and subsequently present a greater risk to a lender. A borrower seeking a longer payback period will have to pay a higher rate of interest to counter the additional lender risk stemming from price volatility.

The maturity date, the predetermined date that the debt obligation will be paid in full, determines the term to maturity.

Yield to Maturity

Yield to maturity is the rate of interest that will make the present value of the cash flows from a debt security equal to the market price at the date of purchase.

Example: An investor purchases a $1,000 par, 6 percent, four-year bond for $950. The issuer makes payments semi-annually. What is the yield to maturity? The investor will receive 8 payments of $30 and then receive the par value of $1,000 at the end of the term to maturity. The yield to maturity is the interest rate that makes the market price of $950 equal to the present value of the cash receipts from this investment, here, 7.47 percent.

Coupon Rate

The coupon rate, or nominal rate, is the interest rate the issuer promises to pay on the par value.

Call Provisions

A call provision enables the issuer to repay the debt prior to its maturity date. The issuer usually pays a premium in exchange for the benefits received from the early retirement of debt (i.e., reduced interest payments). A call provision typically can-

[13] Frank J. Fabozzi, *Fixed Income Analysis for the Chartered Financial Analyst® Program* (New Hope, PA: Frank J. Fabozzi Associates, 2000), p. 5.

not be exercised for the first five years. If the interest rate on the debt is higher than market rates, the valuation analyst should focus on yield-to-call data (the information available at the date the call can be exercised) rather than yield to maturity.[14]

Put Provisions

A put provision enables the lender to force the borrower to pay the debt back early at a specified price and on designated dates. A bond is usually putable at par if it is issued at or close to par value.[15] This gives the lender the flexibility to cash in on its lower-yielding investment in times of rising market rates and issue new, higher-rate debt securities.

Conversion Options

A conversion option grants the bondholder the right to convert the bond into a specified number of shares of the issuing corporation's common stock. The terms of a convertible security usually are structured so that there is no immediate benefit available from a conversion. For example, it is unlikely that a bondholder would convert a bond with a par value of $1,000, convertible into 25 shares of common stock, if the market price per share was $38. However, if the common share price were to rise above $40, conversion would be considered.

ValTip

The value of a convertible bond is tied closely to the value of the underlying common stock as long as the per-share price multiplied by the conversion ratio (i.e., the number of the shares represented by the convertible option) is greater than or equal to the par value of the bond. When the value of the common stock multiplied by the conversion ratio is substantially lower than the par value of the bond, the value of the bond more closely approximates the straight debt amount.

Since a determinable market price per share is usually not readily available for the convertible debt securities of closely held companies, valuation analysis for these securities is problematic compared to that of debt securities of publicly held corporations. The simplest way to deal with this issue is to determine the value of the straight, nonconvertible debt and the value of the convertible option separately.[16]

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[14] Shannon Pratt, Robert F. Reilly, and Robert P. Schweihs, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies*, 4th Edition (New York: McGraw-Hill, 2000), p. 526.

[15] Frank J. Fabozzi, *Fixed Income Analysis for the Chartered Financial Analyst® Program*, p. 20.

[16] Shannon Pratt, Robert F. Reilly, and Robert P. Schweihs, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies,* p. 528.

Sinking Fund Provision

A sinking fund provision requires the issuer to repay periodically a predetermined amount of debt principal prior to maturity. This reduces the amount due by the issuer at maturity and subsequently reduces default risk to the investor.

Collaterized Debt

Collaterized debt is a debt security that is backed up with a specific asset. The floor value of collaterized debt is usually the liquidation value of the underlying asset. Conversely, uncollaterized debt, or a debenture, is not secured by a specific asset so there is no mitigation of default risk. It subsequently requires a higher yield to maturity than an identical collaterized debt security.

Zero-Coupon Debt

A zero-coupon debt security is unique in that there are no coupon payments made to the investor. The entire par value is paid to the investor at the date of maturity. However, interest is paid implicitly because the security is sold to the investor at a deep discount. Bondholders who hold zero-coupon debt are exposed to greater interest rate risk than those who hold bonds yielding regular cash payments. For this reason, zero-coupon bonds typically sell at higher yields to maturity.

Tax Status

Interest earned on debt is typically subject to federal and state income taxation. However, most interest associated with government debt issues (e.g., U.S. Treasury securities, state and municipal bonds, for example) is exempt from federal and/or state taxation. This is reflected in the yield to maturity. All things being equal, a municipal bond should have the same yield to maturity as a debt security after taxes are taken into consideration.

Valuation of Closely Held Debt Securities Using the Discounted Cash Flow Method

Formula

The fair market value of a simple debt security is equal to the present value of the future cash payments, discounted back to the present using a discount rate that embodies the risk associated with the investment.

Since a bond with a long period until maturity is riskier than a bond that will mature in the near future, the bond with the longer term to maturity usually has a higher discount rate than the bond with the shorter term to maturity.

This formula approximates the value of a debt security:

$$\text{Present Value} = \frac{PMT_1}{(1 + k_d)^1} + \frac{PMT_2}{(1 + k_d)^2} + \frac{PMT_3}{(1 + k_d)^3} + \frac{PMT_n}{(1 + k_d)^n} + \frac{\text{Face Value}}{(1 + k_d)^n}$$

Where k_d = market discount rate on debt

Example: A bond with three years to maturity has a par value of $1,000. The coupon rate is 8 percent, and the issuer makes coupon payments annually. The current market discount rate for this kind of security is 10 percent. What is the present value (PV)?

$$PV = \frac{\$80}{(1.10)^1} + \frac{\$80}{(1.10)^2} + \frac{\$80}{(1.10)^3} + \frac{\$1{,}000}{(1.10)^3} = \$950.26$$

One must know the amount and timing of future payments and the appropriate discount rate, or yield to maturity, to calculate the price of a debt security.

The current market price is equal to the present value of the future cash flows discounted back using the market determined yield to maturity. The yield to maturity should embody the risk associated with the particular debt security, including the financial strength and qualitative characteristics of the issuing company and the terms of the specific security. Debt securities are typically subject to less risk than equity securities since bondholders, as creditors of the company, usually have payback priority in the event of company failure.

The yield to maturity of a closely held company's debt security must be estimated, rather than calculated directly from the market, and thus is more subjective.

ValTip

Since there are significant public trading markets for debt securities, it is easy to determine the present value of a publicly traded debt security.

Developing a Yield to Maturity

ValTip

The best method to estimate the yield to maturity of a debt security of a closely held company is a guideline public company analysis.

A guideline public company analysis allows the valuation analyst to quantify a closely held debt security's risk by using the market-determined yields to maturity of similar debt securities from publicly traded companies.

Assessing Risk

The following risks associated with public market debt securities will need careful assessment to account for the risk associated with closely held debt securities.

Interest Rate Risk

Due to the inverse relationship between bond price and the market interest rate, the value of a debt security is subject to interest rate risk. If market rates are higher than the interest rate of a particular bond issue, the trading price of the bond issue will decline.

Prepayment/Call Risk and Reinvestment Risk

In periods of declining interest rates, issuers tend to prepay debts and/or refinance. Similarly, issuers of callable bonds are likely to call parts of the security prior to the maturity date. From the perspective of the investor, risk is increased as the expected cash flow of future interest payments is disrupted. These are called prepayment risk and call risk. In addition, the investor is now forced to reinvest the principal amount at a lower interest rate. This is called reinvestment risk.

Default Risk

An investor in debt securities assumes the risk that the borrower will fail to meet the obligations set forth in the covenant regarding the timely repayment of principal and interest. This is called default risk, or credit risk. To properly assess default risk, the valuation analyst should examine the financial position of the company to determine whether the issuer is creditworthy.

Summary

Debt security valuations are needed for various reasons. Whether the valuation is for an investor or a borrower, the valuation process includes an analysis of the terms of the agreement, the amount and timing of the payments, and a consideration of the various risk factors that may be applicable to the security.

F: VALUATION ISSUES IN PREFERRED STOCK

Introduction

Equity ownership of a corporate entity comes in the form of either common stock or preferred stock. There may be multiple classes of common and preferred stock with different rights and privileges.

Preferred stock is a "hybrid" security with features similar to both common stock and bonds. Like common stock, it represents equity ownership and much like a bond (debt holder) it can receive fixed income distributions and preferential treatment.

In general, preferred shareholders are *preferred* over common shareholders when it comes to dividends, liquidation rights, and other considerations, with the most common preferential characteristic being a dividend guarantee. A preferred shareholder is generally promised a fixed dividend every period until its expiration.

Preferred Stock Features

Dividend Rate

The dividend rate is the pre-determined rate an issuer promises to pay the preferred shareholder.

This rate is typically stated as a percentage of a share's par value. For example, a share of preferred stock with a par value of $100 and a dividend rate of 12 percent will pay a dividend of $12 to the shareholder.

The dividend rate is usually fixed or adjustable following the movement of market interest rates. Adjustable-rate dividends typically present the investor with less risk since they adjust to the current market climate and trade near par. Another advantage of adjustable rate preferred stocks (ARPs) for corporate investors is that only 30 percent of the dividends are taxable to corporations.[17]

Cumulative versus Noncumulative

A company that has issued preferred stock with cumulative dividend terms has an obligation to make all accumulated dividend payments to the preferred stockholders before declaring and paying a dividend on common stock.

For example, one share of cumulative preferred stock of Company ABC has a par value of $50 and a dividend rate of 8 percent. As such, a shareholder of 1 share of ABC is entitled to receive a dividend payment of $4 every year. Company ABC has failed to make the dividend payments for the past two years. If Company ABC were to want to declare and pay a dividend to common shareholders, the company is first obligated to pay preferred shareholders $8 for the prior two years accumulated dividend and $4 for the current year.

[17] Brigham, Eugene F., and Joel F. Houston, *Fundamentals of Financial Management,* 8th Edition (Fort Worth: The Dryden Press, 1998), p. 770.

Cumulative preferred stock has a lower level of risk because the shareholder is assured, to the extent available, of receiving all dividend income. Liquidation coverage becomes more important than dividend coverage since a preferred shareholder is entitled to all dividends in arrears in addition to priority over common shareholders when it comes to the liquidation of the issuing company's assets.

ValTip

Shares of preferred stock with noncumulative features do not carry a guarantee of dividend payments and carry more risk as a result.

However, if a company with noncumulative shares has a history of making payments each period and appears to have the intention and ability to do so in the future, an analyst might decrease risk for these shares.

Redeemable versus Nonredeemable

Redeemable preferred stock is very similar to a callable security in that it has a contractual redemption provision that can be exercised at the discretion of the issuing company. In general, preferred stock is redeemable under one of the following sets of terms[18]:

- The issuing company has the option to redeem the issue in its entirety at a predetermined price over a specified time period. The price paid for the security is usually par value. This type of issue is typically referred to as *callable*.
- The issuing company has the option to redeem the issue in its entirety at a predetermined price contingent upon a certain event, such as a change in ownership, the death of a majority shareholder, or issuance of other securities.
- The issuing company is obliged to redeem the issue according to a specific schedule with funds set aside by the issuer for this purpose. This is referred to as a *sinking fund preferred* since it has similar provisions to a bond that is retired on a regular schedule up to its maturity date.

Voting versus Nonvoting

Preferred shares often come with voting rights which can increase the value to the shareholder.

Minority and Control

The data typically used to compute control premiums for common stock is not as directly applicable to preferred stock.

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[18] Shannon Pratt, Robert F. Reilly, and Robert P. Schweihs, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies*, 4th Edition (New York: McGraw-Hill, 2000), p. 538.

Participating versus Nonparticipating

With participating preferred stock, the shareholder has the right to share in earnings of the company over and above stated dividend amounts. Conversely, a shareholder of nonparticipating stock only has access to the dividend payments stated in the initial agreement.

Convertible versus Nonconvertible

Convertible preferred stock gives the investor the option to exchange the security for common stock giving the shareholder more flexibility.

Put Options

A put option grants the shareholder the right to sell the share back to the issuing company at a pre-determined price, often its par value.

Liquidation Preference

Another significant advantage a preferred equity owner has over a common equity owner is the first right, after all creditors have received what is owed, to the issuing company's assets in the event of liquidation. The liquidation preference of preferred stock is equivalent to the initial investment made by the preferred shareholders plus any dividends in arrears owed to the shareholder.

Valuation Methods

Revenue Ruling 83-120

Revenue Ruling 83-120 is intended to amplify Revenue Ruling 59-60 and set out other considerations regarding the valuation of preferred and common stock for gift tax and recapitalization of private companies.

The most important factors to consider when valuing preferred stock are its yield, dividend coverage, and protection of its liquidation preference.

- "The adequacy of the dividend rate should be determined by comparing its dividend rate to the dividend rate of high-grade publicly traded stock." The conclusion of this assessment should then be used to determine whether or not the subject company's preferred stock yield supports a valuation of the stock at par value.

- Dividend Coverage: Is the issuing company able to pay this? Is it likely that the issuing company will pay it?
- Protection of the stock's liquidation preference.
- Other
  - Power granted to the shareholder(s) through voting rights.
  - Unique provisions and covenants that may have an impact on the fair market value of the preferred stock.
  - Redemption privileges included in the provisions.

Dividend Discount Model

ValTip

The fair market value of a share of preferred stock is equal to the present value of the future cash payments, discounted back to the present using a discount rate that embodies the risk associated with the investment.

The formula for doing so is as follows:

$$P_0 = \frac{D}{k_p}$$

P_0 = Price of stock
D = Annual dividend
k_p = Investors' required rate of return for preferred stock

Example: A share of preferred stock has a par value of $100 and a stated rate of 12 percent. What is the current price of the share if the required rate of return (yield) is 8 percent?

$$D = .12 \times \$100 = \$12$$
$$P_0 = 12/.08$$
$$P_0 = \$150$$

Although this valuation model is simple, determining the value of preferred share of stock of a closely held private company is complex due to the challenges involved in determining an appropriate discount or yield rate. The financial strength and qualitative characteristics of the issuing company and the terms of the specific security must be evaluated. Two critical factors that must be evaluated are:

1. The dividend rate, which is the key to calculating cash flow to the investor
2. Liquidation coverage, indicating the company's ability to pay the full liquidation preference

One of the best measures for determining dividend payment risk is the company's fixed charge ratio, which is required by Revenue Ruling 83-120 for valuations involving income taxes, federal gift, or estate taxes.

$$\text{Fixed Charge Coverage Ratio} = \frac{\text{Earnings Before Interest and Taxes (EBIT)}}{\text{Interest Expense + Preferred Dividends Adjusted for Taxes}}$$

The higher this ratio is, the easier it is for the issuing company to pay its preferred dividends, thus, the lower the rate of return that should be required by the investor.

According to Revenue Ruling 83-120, the issuing company's ability to pay the full liquidation preference must be taken into consideration when determining the fair market value of preferred stock. The ruling states that the risk to a shareholder can be measured by the "protection ratio" or liquidation coverage ratio, a measure that calculates the protection afforded by a company's net assets.

$$\text{Liquidation Coverage Ratio} = \frac{\text{Fair Market Value of Assets-Fair Market Value of Liabilities}}{\text{Liquidation Preference of Preferred Stock}}$$

This ratio can be compared to the ratios of publicly traded preferred stocks and should be greater than 1.0, indicating that the total liquidation preference can be covered.

One of the best methods to estimate the appropriate yield to apply to a share of preferred stock of a closely held company is through a guideline public company analysis. With this method, one can obtain an understanding of a closely held company's preferred stock risk level by comparing it to public preferred securities.

Other Issues

Valuing Preferred Stock with Redemption Options

When valuing preferred stock with redemption options the analyst must consider the length of time before redemption is permissible and the call price. The shorter the time period, the greater the risk since the uncertainty of receiving future cash flows is increased as the pre-determined call price may be less than its fair market value. This exposes the shareholder to additional risk as the likelihood of redemption is increased. Consideration must also be given to an issuing company's plan for financing the redemption of preferred stock, and the discount rate must be adjusted accordingly.

A sinking fund preferred stock has a specified redemption schedule and will be valued based on the number of dividend payments expected to be received in addition to the terminal value of the security.

Valuing Participating Preferred

The value of a participating share is determined by assessing the potential amount of additional earnings above and beyond the stated dividend rate and the likelihood that these earnings will be realized.

Valuing Convertible Preferred

The value of a convertible share of preferred stock is determined by assessing the value of the underlying common security as well as the guaranteed future cash flows that are offered by the preferred share.

Marketability

To a shareholder, the value of a nonconvertible preferred stock primarily lies in the dividend cash flow received, whereas the value of common stock comes from dividends if paid, growth in the share price, and a subsequent sale of the security. It is clear, then, that marketability is more critical to a shareholder of common stock than to an owner of preferred stock of a private company. As such, an identical Lack of Marketability Discount typically cannot be applied to seemingly comparable shares of preferred stock and common stock of the same corporation. It is critical that a valuation professional examines each situation and makes an LOM discount conclusion on an individual basis.

Summary

When valuing preferred stock, it is imperative that the valuation professional consider, above all else, the issuing company's ability to meet the terms of a preferred stock issue (its dividend obligation) and protect the preferred shareholders in the event of liquidation. As such, a preferred shareholder should be in a lower-risk, income receiving investment position. Special features can also greatly affect value.

Preferred Stock Valuation of Yaboo, Inc. (Illustration Only)

The following example illustrates the types of data utilized in valuing preferred stock of closely held companies. Yaboo, Inc. is a private real estate investment trust (REIT). The purpose of the valuation is estate tax.

The analysis of yields and preferred returns follows the guidelines contained in IRS Revenue Ruling 83-120 pertaining to the valuation of preferred stocks for gift tax and other purposes. According to this revenue ruling, the most important factors to consider when determining the value of a preferred stock are:

- Its dividend yield
- Its dividend coverage, or the amount of pretax, pre-interest earnings available to pay interest and dividends
- Its liquidation protection, or the difference between the company's assets and liabilities
- Its voting rights
- The existence of any peculiar covenants or provisions not normally found on publicly traded preferred stocks
- Whether it has any redemption privileges

The Company has issued shares of preferred stock. Preferred shareholders receive a dividend of $60.00 per share.

In order to estimate the fair market value of Yaboo's preferred stock, it is necessary to develop a comparable group of publicly traded preferred stocks. Three

grades of publicly traded nonconvertible preferred stocks, speculative grade, investment grade, and unrated, were examined. These classifications were selected in order to compare their respective yields with that of the Company's preferred stock. A total of 47 publicly traded REIT preferred stocks were examined.

The speculative grade and unrated preferred stocks are generally of low investment quality with moderate earnings and asset protection. The assurance of dividend payments over time is uncertain. The investment grade preferred stocks are high-quality investments with good earnings and asset coverage. Dividend payment is more certain than that of the speculative grade.

A group of publicly traded preferred stocks was identified and analyzed in relationship to Yaboo's preferred stock in several dimensions. These dimensions include the stated dividend rates, the coverage of the dividend (fixed charge coverage ratio), the liquidation coverage (a measure of the Company's ability to pay the preferred stock's liquidation preference), and other dimensions, including other financial ratios, voting rights and redemption privileges.

Due to Yaboo's lower debt, its coverage ratios exceeded those of even the highest rated issues. However, its pretax return on capital is lower than all but the most speculative issues. And, while the subject REIT is comparable in size to the publicly traded ones, its shares of stock are not readily marketable. Given all of these considerations, we have estimated the appropriate yield for Yaboo's preferred stock to be 7.5 percent, which falls between average yields of the higher and lower investment grade REIT preferred stocks.

The calculations for the coverage ratios of the comparative publicly traded companies are presented in Exhibit 23.7. Based on a market yield of 7.5 percent, the indicated fair market value of a share of Yaboo preferred stock is $800 as follows $60/.075 = $800.

G: RESTRICTED STOCK VALUATION

Introduction

The valuation of restricted stock is not just about understanding the restricted stock studies used in estimating lack of marketability discounts (Chapter 8). The stock's price volatility, applicable trading restrictions, and the cost of hedging instruments or other strategies can all play a significant role in its valuation.

Definition and Types of Restricted Stock

ValTip

Restricted stock is stock of a publicly traded corporation that is restricted from public trading for a specified period of time. Restricted stock is often identical to its publicly traded counterpart, except that it is not freely tradeable.

Exhibit 23.7 Yaboo, Inc., Preferred Stock Analysis of Publicly Traded REIT Companies as of December 31, 2001

	COMPANY	Company Ticker	Preferred Stock Ticker	Convertible?	Rating	Price / Share	Div. / Share	Preferred Div. Yield	Price / Share	First Call Date	EBIT # MM	Cash Dividends -Preferrered $ MM	Interest Expense $ MM
1	Weingarten Realty Series C	WRI	WRIPrC	No	A-	$49.950	$3.52	7.05%	$50.00	03/14/04	120.307	20.040	47.394
2	Kimco Rlty	KIM	KIMPrC	No	BBB+	$25.050	$2.08	8.30%	$25.00	04/14/01	295.217	26.328	92.100
3	Public Storage	PSA	PSAPrK	No	BBB+	$25.300	$2.08	8.22%	$25.00	01/18/04	334.951	111.180	13.071
4	Archstone Communities Tr		ASNPrC	No	BBB	$25.350	$2.16	8.52%	$25.00	08/19/02			
5	AvalonBay Communities	AVB	AVBPrH	No	BBB	$26.740	$2.16	8.08%	$25.00	10/14/08	255.342	39.779	101.937
6	Duke-Weeks Realty	DRE	DREPrF	No	BBB	$24.960	$2.00	8.01%	$25.00	10/09/02	381.417	48.981	166.948
7	Equity Office Properties Trust		EOPPrC	No	BBB	$25.500	$2.16	8.47%	$25.00	12/07/03	1,038.401	45.924	535.533
8	Equity Residential Prop.Trust	EQR	EQRPrD	No	BBB	$25.950	$2.16	8.32%	$25.00	07/14/07	786.665	100.854	388.419
9	Equity Residential Prop.Trust		EQRPrL	No	BBB	$24.420	$1.92	7.86%	$25.00	02/12/03			
10	Healthcare Prop. Investment	HCP	HCPPrC	No	BBB	$25.000	$2.16	8.64%	$25.00	10/26/02	216.213	24.900	86.747
11	Post Properties	PPS	PPSPrB	No	BBB	$24.320	$1.92	7.89%	$25.00	10/27/07	174.212	11.875	51.939
12	Prologis Trust		PLDPrD	No	BBB	$23.710	$2.00	8.44%	$25.00	04/12/03	413.998	56.763	190.691
13	BRE Properties	BRE	BREPrA	No	BBB-	$25.210	$2.12	8.41%	$25.00	01/28/04	127.156	4.569	61.462
14	Highwood Properties	HIW	HIWPrD	No	BBB-	$23.340	$2.00	8.57%	$25.00	04/23/03	265.357	32.580	136.496
15	Liberty Property	LRY	LRYPrA	No	BBB-	$25.100	$2.20	8.76%	$25.00	07/29/02	271.492	11.000	126.095
16	Vornado Rlty		VNOPrB	No	BBB-	$25.150	$2.12	8.43%	$25.00	03/16/04	496.798	38.690	182.542
17	Vornado Rlty		VNOPrC	No	BBB-	$25.050	$2.12	8.46%	$25.00	05/16/04			
18	Develp Div Rlty Dep	DDR	DDRPrC	No	BBB-	$24.350	$2.08	8.54%	$25.00	07/06/03	174.016	27.262	95.230
19	Develp Div Rlty Dep		DDRPrD	No	BBB-	$25.000	$2.16	8.64%	$25.00	08/19/03			
20	Fed'l Realty Investment Trust	FRT	FRTPrA	No	BBB-	$24.100	$2.00	8.30%	$25.00	10/05/02	129.804	7.950	79.718
21	Shurgard Storage	SHU	SHUPrC	No	BBB-	$25.760	$2.16	8.39%	$25.00	12/07/03	80.437	8.750	40.011
22	Colonial Prop. Trust	CLP	CLPPrA	No	BB+	$25.100	$2.20	8.76%	$25.00	11/05/02	143.083	10.940	81.455
23	Hospitality Prop Tr	HPT	HPTPrA	No	BB+	$25.620	$2.36	9.21%	$25.00	04/11/04	163.953	7.125	37.682
24	Realty Income	O	OPrB	No	BB+	$25.750	$2.36	9.17%	$25.00	05/24/04	79.623	9.712	32.547
25	PS Business Parks	PSB	PSBPrA	No	BB+	$25.300	$2.32	9.17%	$25.00	04/29/04	71.298	5.088	2.896
26	United Dominion Realty Trust	UDR	UDRPrB	No	BB+	$25.450	$2.16	8.49%	$25.00	05/28/07	207.460	36.891	159.640
27	Apartment Investment & Mgt.		AIVPrG	No	B+	$25.250	$2.36	9.35%	$25.00	07/14/08	357.080	63.183	279.104
28	iStar Financial	SFI	SFIPrD	No	B+	$21.350	$2.00	9.37%	$25.00	10/07/02	389.429	36.908	174.404
29	FelCor Lodging		FCHPrB	No	B	$23.390	$2.24	9.58%	$25.00	05/06/03	291.058	24.682	160.620
30	Host Marriott	HMT	HMTPrA	No	B	$24.910	$2.52	10.12%	$25.00	08/02/04	805.000	20.000	473.000
31	Host Marriott		HMTPrB	No	B	$24.910	$2.52	10.12%	$25.00	04/28/05			

	COMPANY	Pretax Income $ MM	Total Taxes $ MM	Tax Rate	Total Assets $ MM	Debt-Total $ MM	Total Liabilities $ MM	Total Stockolders' Equity $ MM	Preferred Stock Liqui. Value $ MM	Fixed Charge Coverage	Liquidation Coverage	Capitalization Ratio	Pretax Return On Capital
1	Weingarten Realty Series C	81.649	0.000	0.000	1,517.581	792.353	887.714	629.867	0.277	1.784	2,273.888	0.557	9.07%
2	Kimco Rlty	207.079	—	0.0%	3,171.348	1,325.663	1,467.009	1,704.339	329.564	2.493	5.171	0.546	9.87%
3	Public Storage	335.444	—	0.0%	4,513.941	156.003	789.824	3,724.117	1,155.150	2.696	3.224	0.338	8.98%
4	Archstone Communities Tr												
5	AvalonBay Communities	212.512	—	0.0%	4,397.225	1,729.924	1,954.732	2,442.493	458.068	1.802	5.332	0.524	7.54%
6	Duke-Weeks Realty	304.563	—	0.0%	5,460.036	1,973.215	2,747.146	2,712.890	608.874	1.766	4.456	0.551	10.06%
7	Equity Office Properties Trust	538.881	—	0.0%	18,794.254	8,802.994	10,723.058	8,071.195	613.923	1.786	13.147	0.558	6.37%
8	Equity Residential Prop.Trust	596.672	—	0.0%	12,263.966	5,706.152	6,644.419	5,619.547	1,183.136	1.608	4.750	0.608	8.70%
9	Equity Residential Prop.Trust												
10	Healthcare Prop. Investment	139.222	—	0.0%	2,398.703	1,158.928	1,254.148	1,144.555	274.487	1.937	4.170	0.622	9.81%
11	Post Properties	116.116	—	0.0%	2,551.237	1,213.309	1,522.627	1,028.610	0.150	2.730	6,857.400	0.541	7.50%
12	Prologis Trust	225.194	5.130	2.278	5,946.334	2,677.736	3,018.963	2,927.371	691.403	2.830	4.234	0.601	7.42%
13	BRE Properties	46.435	—	0.0%	1,718.129	825.253	917.013	801.116	53.750	1.926	14.904	0.540	6.63%
14	Highwood Properties	157.189	—	0.0%	3,701.602	1,587.019	1,910.057	1,791.545	397.500	1.569	4.507	0.587	8.69%
15	Liberty Property	181.583	—	0.0%	3,396.355	1,703.896	2,075.550	1,320.805	125.000	1.980	10.566	0.605	10.17%
16	Vornado Rlty	337.490	—	0.0%	6,370.314	2,656.897	4,291.594	2,078.720	489.462	2.246	4.247	0.664	10.98%
17	Vornado Rlty												
18	Develp Div Rlty Dep	120.426	—	0.0%	2,332.021	1,227.575	1,548.271	783.750	303.750	1.421	2.580	0.761	10.72%
19	Develp Div Rlty Dep												
20	Fed'l Realty Investment Trust	67.067	—	0.0%	1,621.079	1,034.446	1,153.425	467.654	100.000	1.481	4.677	0.755	9.77%
21	Shurgard Storage	49.026	—	0.0%	1,239.157	495.354	598.592	640.565	100.000	1.650	6.406	0.524	7.84%
22	Colonial Prop. Trust	79.393	—	0.0%	1,944.099	1,179.095	1,490.273	453.826	0.050	1.549	9,076.521	0.722	9.85%
23	Hospitality Prop Tr	126.271	—	0.0%	2,220.909	464.748	737.969	1,482.940	75.000	3.659	19.773	0.277	8.42%
24	Realty Income	54.788	—	0.0%	934.766	404.000	419.197	515.569	99.368	1.884	5.188	0.547	9.50%
25	PS Business Parks	77.922	—	0.0%	930.756	30.971	366.413	564.343	55.000	8.930	10.261	0.144	13.58%
26	United Dominion Realty Trust	80.170	—	0.0%	3,453.957	1,992.330	2,235.065	1,218.892	435.206	1.056	2.801	0.756	7.47%
27	Apartment Investment & Mgt	113.589	—	0.0%	7,699.874	4,392.445	5,198.217	2,501.657	837.717	1.043	2.986	0.759	5.70%
28	iStar Financial	218.486	—	0.0%	4,034.775	2,131.967	2,246.890	1,787.885	402.500	1.843	4.442	0.647	10.02%
29	FelCor Lodging	73.826	—	0.0%	4,103.603	1,838.241	2,269.498	1,834.105	293.265	1.571	6.254	0.580	6.38%
30	Host Marriott	133.000	(98.00)	0.0%	8,396.000	5,797.000	6,975.000	1,421.000	205.000	1.633	6.932	0.832	8.40%
31	Host Marriott												

(continues)

Exhibit 23.7 *continued*

	COMPANY	Company Ticker	Preferred Stock Ticker	Convertible?	Rating	Price / Share	Div. / Share	Preferred Div. Yield	Price / Share	First Call Date	EBIT # MM	Cash Dividends -Preferrered $ MM	Interest Expense $ MM
32	Equity Inns	ENN	ENNPrA	No	B-	$22.240	$2.36	10.61%	$25.00	06/24/03	54.065	6.531	34.072
33	Associated Estates Realty	AEC	AECPrA	No	B-	$24.900	$2.44	9.80%	$25.00	N/A	41.470	5.484	43.640
34	JDN Realty	JDN	JDNPrA	No	B-	$24.770	$2.36	9.53%	$25.00	09/14/03	58.299	4.688	48.873
35	Omega Healthcare Investors	OHI	OHIPrB	No	D	$18.900	Div. Susp. 02/01/01	N/A	$25.00	6/30/03	(12.481)%	16.928	42.400
36	Alexandria RE Equities	ARE	AREPrA	No	NR	$27.370	$2.36	8.6%	$25.00	6/10/04	51.800	3.666	33.501
37	CBL & Associates Properties	CBL	CBLPrA	No	NR	$25.200	$2.24	8.9%	$25.00	6/30/03	174.742	6.468	94.597
38	Corporate Office Trust	OFC	OFCPrB	No	NR	$25.780	$2.52	9.8%	$25.00	7/14/04	55.604	3.802	35.725
39	Corrections Corp. of America	CXW	CXWPrA	No	NR	$18.600	Div. Omitted 06/23/00	N/A	$25.00	1/29/03	10.522	13.526	153.345
40	Crown America Realty Trust	CWN	CWNPrA	No	NR	$51.700	$5.52	10.7%	$52.50	7/30/07	64.817	13.695	59.062
41	Eastgroup Properties	EGP	EGPPrA	No	NR	$25.500	$2.24	8.8%	$ 5.00	6/18/03	46.688	10.008	20.630
42	G&L Realty	GLR	GLRPrB	No	NR	$17.350	$2.40	13.8%	$25.00	12/31/01	14.831	7.164	13.819
43	Great Lakes REIT	GL	GLPrA	No	NR	$25.990	$2.44	9.4%	$25.00	12/15/03	38.330	3.656	15.193
44	LTC Properties	LTC	LTCPrB	No	NR	$20.700	$2.28	11.0%	$25.00	12/31/01	65.877	15.087	27.426
45	Parkway Properties	PKY	PKYPrA	No	NR	$24.620	$2.20	8.9%	$25.00	4/22/03	48.727	5.797	23.818
46	Prime Group Realty	PGE	PGEPrB	No	NR	$17.400	$2.24	12.9%	$25.00	6/4/03	81.001	12.147	69.988
47	Sovran Self Storage	SSS	SSSPrB	No	NR	$26.500	$2.48	9.4%	$25.00	7/29/04	45.227	2.955	17.497

MEDIAN FOR ALL COMPANIES	Div. / Rating	Yield
	8.76%	
MEDIAN FOR RATING OF	AA / AA-	NA
MEDIAN FOR RATING OF	A+ / A / A-	7.05%
MEDIAN FOR RATING OF	BBB+ / BBB / BBB-	8.42%
MEDIAN FOR RATING OF	BB+ / BB / BB-	9.17%
MEDIAN FOR RATING OF	B+/B/B-	9.69%
MEDIAN FOR RATING OF	D	N/A
MEDIAN FOR RATING OF	NR	9.39%

Yaboo, Inc.											35.459	0.060	0.000
				Selected Yield	7.50%								

	COMPANY	Pretax Income $ MM	Total Taxes $ MM	Tax Rate	Total Assets $ MM	Debt-Total $ MM	Total Liabilities $ MM	Total Stockolders' Equity $ MM	Preferred Stock Liqui. Value $ MM	Fixed Charge Coverage	Liquidation Coverage	Capitalization Ratio	Pretax Return On Capital
32	Equity Inns	16.677	—	0.0%	801.743	383.403	417.957	383.786	68.750	1.332	5.582	0.589	6.61%
33	Associated Estates Realty	5.342	—	0.0%	819.559	568.243	623.103	196.456	56.250	0.844	3.493	0.817	6.41%
34	JDN Realty	23.719	—	0.0%	1,083.963	574.141	597.354	486.609	50.000	1.088	9.732	0.588	6.84%
35	Omega Healthcare Investors	(49.557)	—	0.0%	948.451	451.392	484.138	464.313	207.500	(0.210)	2.238	0.720	-0.78%
36	Alexandria RE Equities	26.009	—	0.0%	780.984	431.256	461.832	319.152	38.588	1.394	8.271	0.626	7.93%
37	CBL & Associates Properties	96.134	—	0.0%	2,115.565	1,424.337	1,680.740	434.825	0.029	1.729	14,993.964	0.766	10.26%
38	Corporate Office Trust	23.875	—	0.0%	794.837	474.349	601.109	193.728	31.250	1.407	6.199	0.757	8.92%
39	Corrections Corp. of America	(778.909)	(48.00)	0.0%	2,176.992	1,152.570	1,488.977	688.015	188.142	0.063	3.657	0.728	-33.99%
40	Crown America Realty Trust	6.886	—	0.0%	855.501	725.248	758.929	96.572	0.025	0.891	3,862.878	0.883	8.02%
41	Eastgroup Properties	36.889	—	0.0%	666.205	270.709	290.813	375.392	113.125	1.524	3.318	0.594	8.90%
42	G&L Realty	1.029	—	0.0%	205.466	158.942	165.575	39.891	0.072	0.707	554.042	0.800	7.47%
43	Great Lakes REIT	34.271	—	0.0%	431.610	190.911	212.537	219.073	37.500	2.034	5.842	0.557	12.06%
44	LTC Properties	32.619	—	0.0%	676.585	262.560	282.458	394.127	165.500	1.550	2.381	0.652	9.14%
45	Parkway Properties	34.900	—	0.0%	655.237	307.352	329.488	325.749	66.250	1.645	4.917	0.590	9.27%
46	Prime Group Realty	21.472	—	0.0%	1,439.093	799.171	1,077.330	361.763	39.890	0.986	9.069	0.723	7.88%
47	Sovran Self Storage	27.730	—	0.0%	547.139	231.223	269.741	277.398	30.000	2.211	9.247	0.514	8.89%
	MEDIAN FOR ALL COMPANIES									1.639	5.457	0.603	8.7%
	MEDIAN FOR RATING OF			AA / AA-						NA	NA	NA	NA
	MEDIAN FOR RATING OF			A+ / A / A-						1.784	2,273.888	0.557	9.07%
	MEDIAN FOR RATING OF			BBB+ / BBB / BBB-						1.864	4.713	0.573	8.84%
	MEDIAN FOR RATING OF			BB+ / BB / BB-						1.884	10.261	0.547	9.50%
	MEDIAN FOR RATING OF			B+/B/B-						1.332	5.582	0.647	6.61%
	MEDIAN FOR RATING OF			D						(0.210)	2.238	0.720	(0.78%)
	MEDIAN FOR RATING OF			NR						1.465	7.235	0.687	8.90%
	Yaboo, Inc.	35.459	—	0.0%	518.673	—	0.025	518.648	0.001	590.988	518,647,590	0.000	6.84%

Sources: Standard & Poor's Stock Guide December 2001, S&P's Research Insight (Database), and MSN Money Central (Online).

ValTip

The seminal revenue ruling in this area, Revenue Ruling 77-287, provides guidance for the valuation of restricted stock.

Revenue Ruling 77-287 recognizes that a discount from the freely traded price is applicable in the valuation of its restricted counterpart. In the valuation of restricted stock, the ruling notes:

> In judging the opportunity cost of freezing funds, the purchaser is analyzing two separate factors. The first factor is the risk that the underlying value of the stock will change in a way that, absent the restrictive provisions, would have prompted a decision to sell. The second factor is the risk that the contemplated means of legally disposing of the stock may not materialize. From the seller's point of view, a discount is justified where the seller is relieved of the expenses of registration and the public distribution, as well as of the risk that the market will adversely change before the offering is completed.

Revenue Ruling 77-287 identifies five types of restricted securities:

1. *Restricted Securities*. Defined in SEC Rule 144 as "securities acquired directly or indirectly from the issuer thereof, or from an affiliate of such issuer in a transaction or chain of transactions not involving any public offering."
2. *Unregistered Securities*. "Those securities to which a registration statement, providing full disclosure by the issuing corporation, has not been filed with the SEC [Securities and Exchange Commision] pursuant to the Securities Act of 1933."
3. *Investment Letter Stock or Letter Stock*. "Shares of stock that have been issued by a corporation without the benefit of filing a registration statement with the SEC. Such stock is subject to resale and transfer restrictions set forth in a letter agreement requested by the issuer and signed by the buyer of the stock when the stock is delivered."
4. *Control Stock*. "Shares of stock that have been held or are being held by an officer, director or other person close to the management of the corporation. These persons are subject to certain requirements pursuant to SEC rules upon resale of shares they own in such corporations."
5. *Private Placement Stock*. "Stock that has been placed with an institution or other investor who will presumably hold it for a long period and ultimately arrange to have the stock registered if it is to be offered to the general public."

Two other types of restrictions that result in a restricted security include:

1. *Underwriter Imposed Lock-up*. This agreement places restrictions on the sale of stock following an underwriter assisted equity offering. The restricted time period can vary with each offering; the agreement usually contains a provision allowing the underwriter to lift the restriction prior to the end of the restriction term.

2. *Company Imposed.* The company often imposes blackout periods restricting the sale of shares by particular shareholders (board members, management, or in some cases all employees) around certain dates or key events to avoid running afoul of insider trading laws.

Rule 144 Restrictions

Rule 144 is designed to prohibit the creation of public markets in securities of [companies on] which adequate current information is not available to the public. At the same time, when adequate current information concerning the issuer is available to the public, the rule permits the public sale . . . of limited amounts of securities owned by persons controlling, controlled by, or under common control with the issuer and by persons who have acquired restricted securities of the issuer.[19]

Rule 144 imposes two types of restrictions:

1. *Holding Period.* Prior to 1997, Rule 144 stated that "a minimum of two years must elapse between the later of the date of acquisition of the securities from the issuer or from an affiliate of the issuer, and if the acquirer takes the securities by purchase, the two year holding period shall not begin until the full purchase price or other consideration is paid or given."[20]

   Effective April 29, 1997, this holding period was reduced to one year.
2. *Volume Limitations.* Even after the holding period lapses, the shares are subject to additional volume limitations. These volume limitations lapse after a holding period of two years for nonaffiliates but continue indefinitely for affiliates. An affiliate is defined in Rule 144 as "any person or entity who has the direct or indirect power to direct or cause the direction of management and management policies, whether through the ownership of voting securities, by contract or otherwise." The volume limitations are:

   - A holder of restricted stock cannot sell more than 1.0 percent of the outstanding shares of stock during any three-month period
   - A holder of restricted stock cannot sell more stock in a three-month period than the average weekly market trading volume in such securities during the four calendar weeks preceding any such sale

Restricted Stock Studies

Revenue Ruling 77-287 references the SEC *Institutional Investors Study* published in March 1971. Since that time, other restricted stock studies have been completed. Most of these studies were completed before the holding period for Rule 144 stock was changed from two years to one year. The average price discount from these studies generally ranged from 20 to 36 percent. One study completed by Standard Research Consultants arrived at a median price discount of 45 percent.

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[19] Z. Christopher Mercer, *Quantifying Marketability Discounts* (Peabody Publishing, LP, 1997), pp. 40–41.
[20] *Ibid.*

At least one study has been completed since the Rule 144 holding period was reduced to one year. Kathryn A. Aschwald of Columbia Financial Advisors published a study of restricted stock sales between January 1, 1997, and December 31, 1998. This study resulted in 15 transactions with an average discount of 13 percent and a median of 9 percent The discounts ranged from 0 to 30 percent.[21]

Please refer to Chapter 8 for a thorough review of the restricted stock studies.

Typical Reasons for Restricted Stock Valuations

Perhaps the most dominant reason to value restricted stock is for compliance purposes. Financial reporting requirements (typically the fair value disclosure requirements) have been and should continue to be a major reason why restricted stock needs to be valued. Demand for restricted stock valuation services also arises from the Internal Revenue Service income, gift and estate tax compliance. The fair market value of restricted securities can be needed to support a business's compensation deduction, a giftor's gift of restricted securities, or the donation of same to a charitable organization, or to assist in the valuation of a decedent's gross estate. With the increase in initial public offerings (IPOs) in the late 1990s, restricted stock transactions became more prevalent, as did the need for the compliance valuations discussed earlier. As the bottom fell out of the technology market in 2000, litigation (including disputes between companies and their employees) rose in prominence and created another reason why restricted stock needed to be valued.

Documents to Review and Factors to Consider in the Valuation Process

Revenue Ruling 77-287 lists data and documents to be considered in the valuation of restricted stock. These 12 items are discussed below and are in addition to the eight general factors discussed in Revenue Ruling 59-60. (See Chapter 11 for a discussion of Revenue Ruling 59-60.) All references to "the study" refer to the SEC *Institutional Investors Study* published in 1971.

1. *Earnings.* "Earnings played a major part in establishing the ultimate discounts at which these stock were sold from the current market price. Apparently earnings patterns . . . determine the degree of risk of the investment."
2. *Sales.* "The dollar amount of sales of issuer's securities. The results of the study generally indicate that the companies with the lowest dollar amount of sales accounted for most of the transactions involving the highest discount rates, while they accounted for only a small portion of all transactions involving the lowest discount rates."
3. *Trading Market.* "According to the study, discount rates were greatest on restricted stocks with unrestricted counterparts traded over-the-counter followed by those with unrestricted counterparts listed on the American Stock Exchange, while discounts for . . . those stocks with unrestricted counterparts listed on the New York Stock Exchange were the smallest."

[21] Kathryn F. Aschwald, "Restricted Stock Discounts Decline as a Result of 1-Year Holding Period," Shannon Pratt's *Business Valuation Update* (May 2000), p. 1.

4. *Resale Agreement Provisions*. "Certain provisions are often found in agreements between buyers and sellers that affect the size of discounts at which restricted stocks are sold." These provisions may include piggyback registration rights, option to require registration at either the buyer's or seller's expense, or provisions giving the buyer the right to receive continuous disclosure information.
5. Trading prices and trading volume of the related class of traded securities one month preceding the valuation date.
6. Copy of any declaration of trust, trust agreement, and any other agreements related to the shares of restricted stock.
7. Copy of any document showing any offers to buy or sell or indications of interest in buying or selling the restricted shares.
8. Latest prospectus of the company.
9. Annual reports of the company for three to five years preceding the valuation date.
10. The relationship of the parties to the agreements concerning the restricted stock, such as whether they are members of the immediate family or officers or directors of the company.
11. The relative negotiating strengths of the buyer and seller of restricted stock may have a profound effect on the amount of the discount. For example a tight money situation may cause the buyer to have more negotiating strength in a transaction.
12. Whether the interest being valued represents a majority ownership.

The following five additional factors are believed to have an impact on the fair market value of restricted securities:

1. *Trading Volume and Bid/Ask Spread*. "Companies with a history of thin trading volumes and high bid/ask spreads may be subject to greater liquidation risk and therefore command a higher discount for lack of liquidity."[22]
2. *Dividend History and Policy* (also noted in Revenue Ruling 59-60). "Companies with a history of high-yield dividends may be considered less risk investments than companies with little or no dividend history. Therefore, such companies command a lower discount for lack of liquidity."[23]
3. *Brokerage House Analysts' Buy/Sell Recommendations*.[24] How many analysts follow the stock, and are there recent changes in recommendations?
4. *History of stock repurchases by the issuing company.* "Occasionally, companies will announce stock repurchases. Typically, this occurs when the company believes the market price of the subject stock is undervalued. It is necessary to review the history of company stock repurchases in the analysis of restricted stocks to determine if a future company repurchase is likely."[25]

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[22] Daniel R. Van Vleet and Frank D. Gerber, "Valuation Analysis of Restricted Stocks of Public Companies," *Insights Quarterly* (Willamette Management Associates, 1999).
[23] *Ibid.*
[24] J. Michael Julius, "Delayed Liquidity for Sellers Receiving Restricted Shares," *Mergers & Acquisitions* (January–February 1997), p. 36.
[25] Daniel R. Van Vleet and Frank D. Gerber, "Valuation Analysis of Restricted Stocks of Public Companies," *Insights Quarterly* (Willamette Management Associates, 1999).

5. *Ability and cost to construct a hedge position* using publicly traded derivative securities.

Valuation Methodologies

One of the first tasks facing the analyst during the valuation of restricted securities is framing the issue in an understandable context. This involves:

- Clearly and completely identifying and discussing the material restrictions to which the security is subject
- Examining relevant restricted stock studies' findings and conclusions
- Performing independent research into recent restricted stock transactions

Once the framework has been constructed and the need for a discount from the freely-traded value of the security is established, the analyst can concentrate on estimating the magnitude of the discount. In addition to comparisons using the previously mentioned restricted stock studies, the analyst can use:

- Option-pricing analysis
- The cost of registering or monetizing the stock

Option-Pricing Analysis

Three "hedge" opportunities may be available to holders of restricted stock. If these hedging opportunities were available, the cost to implement the strategy would be equivalent to the lack of marketability/restricted stock discount appropriate for the subject security.

1. *Open Market Hedge.* If the restricted stocks' publicly-traded counterpart has put and call options associated with it, a hedge can be constructed that locks in the market price of the stock as of the valuation date. This type of hedge is referred to as "a collar." The cost of establishing the collar represents the lack of marketability/restricted stock discount.
2. *Structured Hedge.* Certain brokerage firms and investment banks offer an investment strategy designed to manage the risk associated with holding large blocks of restricted securities. The complexity of these strategies and related requirements may preclude their use by certain investors. Where feasible, however, they transfer the risk of fluctuating market prices to the investment/brokerage house and away from the holder of the restricted securities. The fees to implement the strategies represent the lack of marketability/restricted stock discount.
3. *Black-Scholes Hedge.* If there are no traded options associated with the restricted security's public counterpart, the Black-Scholes Option Pricing Method (BSOPM) can be used to estimate the cost of a put option and the proceeds from a call option.

Numerous articles discuss hedging strategies:

- J. Michael Julius, "Delayed Liquidity for Sellers Receiving Restricted Shares," *Mergers & Acquisitions* (January-February 1997), p. 36.

- David B. H. Chaffe III, "Option Pricing as a Proxy for Discount for Lack of Marketability in Private Company Valuations," *Business Valuation Review* (December 1993), pp. 182–185
- Kasim L. Alli and Donald J. Thompson II, "The Value of the Resale Limitation on Restricted Stock: An Option Theory Approach," *Valuation* (March 1991), pp. 22–33.

These articles, however, suggest only purchasing a put. This strategy may not lock in the market price as of the valuation date and may overestimate the lack of liquidity. Alli and Thompson, who conclude that the cost of a put overestimates the cost of the liquidity restriction, support this contention. To lock in the market price as of the valuation date, an investor may need to construct a collar. The proceeds from the sale of the call would offset a portion of the cost of purchasing a put, thereby reducing the net cost of the hedge.

Cost of Registering or Monetizing the Stock

If the restricted stock in question conveys "demand rights" (i.e., can demand that the company register the shares), "piggyback rights" (i.e., can follow along when the company registers other shares), or represents a controlling interest, the registration of the shares may be a viable option. In such cases, the cost (including the time value of money) to register and sell the shares may be an appropriate proxy for the lack of marketability/restricted stock discount.

Monetizing a restricted stock position is simply borrowing against the stock to achieve some percentage of liquidity. The loan-to-value ratio may be as low as 25 percent, and the interest rate is often prime plus a few hundred basis points. This strategy is a partial answer at best. Perhaps the best use of the loan proceeds is to fund the cost of constructing a collar and in this way potentially reduce the effective cost of the collar.

Dribble-Out Period

As discussed earlier, Rule 144 imposes volume-trading restrictions on the restricted stockholder *after* the initial holding period lapses. The effect the dribble-out provisions have on value may be estimated in a couple of ways. The first begins with estimating how long it would take to liquidate the restricted stock position without running afoul of the dribble-out restrictions. This is done by reviewing the publicly traded stock's daily volume history over a relevant period of time and deciding how quickly the stock can be liquidated without affecting the public stock price and without violating the dribble-out restrictions. The particular length of trading history to examine is a judgment call but should be long enough to reflect the market conditions likely to be encountered during the dribble-out period. On occasion, market-makers or knowledgeable stock brokers can be interviewed to help ascertain the amount of shares that can be sold without affecting the stock price. Next, the present value of the sales proceeds is computed and compared to the freely-traded value of the stock; the difference is an estimate of the lack of marketability/restricted stock discount.

Another way to estimate the effect of volume trading restrictions on value is to consider their impact on the effective holding period. This approach also begins

with estimating the time needed to fully liquidate the restricted stock position. Rather than estimating the sales proceeds and computing present value, the weighted-average time to complete the dribble-out is added to the initial holding period. Then the hedge strategies discussed earlier are implemented to hedge the position over the longer effective holding period. The cost of the hedge reflects the lack of marketability/restricted stock discount covering both the initial holding period and the weighted average dribble-out period.

Effect of Stock Price Volatility on Restricted Stock Discounts

In the Black-Scholes world, volatility is the option holder's friend. An increase in volatility implies a greater chance that the option will be in-the-money before it expires. For holders of restricted stock, however, volatility is the enemy. Without the ability to time the sale of the security, the holder is subject to the downside risks but may not be able to capture the potential upside benefits. Frances A. Longstaff published an article in the *Journal of Finance* in 1995 that utilized option-pricing concepts to calculate estimates of lack of marketability discounts for restricted stock based upon two factors: the length of the marketability restriction period and the volatility in the returns of the subject security's publicly-traded counterpart.[26] The results of the article were consistent with the existing stock studies and provided a framework for evaluating the effect of restriction periods that are either longer or shorter than the restriction periods measured by the restricted stock studies. The article includes calculations of the maximum percentage restricted stock discounts for periods ranging from one day to five years at three different measures of volatility.

The Longstaff analysis indicates that the greater the volatility, the greater the discount and that the marketability discount is not a linear function of time because the greatest risks, and therefore the largest increases in percentage discount, occur early in the restriction period.

For example, one effect of volatility could be: A stock with an annual volatility of 20 percent has an estimated discount of 24.6 percent if the restriction period is two years. A 50.0 percent reduction in the restriction period to one year produces only a 31 percent reduction in the discount (from 24.6 to 17 percent). A further 50 percent reduction to six months again reduces the discount by only 31 to 11.7 percent. Thus, a six-month restriction period would imply a discount almost half as large as that resulting for a 24-month period.

As Longstaff notes, the methodology utilized provides an estimate of the upper bounds of the discount for lack of marketability. He compares this to the restricted

[26] Frances A. Longstaff, "How Much Can Marketability Affect Security Values?" *Journal of Finance*, Vol. 1, No. 5 (December 1995), pp. 1767–1774.

stock studies in which "the empirical estimates of the discount for lack of marketability closely approximate the upper bound," implying that the analytical results of his research actually may provide useful approximations of the value of marketability rather than just serving as its upper bound.

Conclusion

To perform restricted stock valuations, the appraiser should fully understand the material restrictions placed on the stock and understand the factors affecting restrictive stock discounts. The published restricted stock studies and articles can be reviewed to help identify the need for and the relative magnitude of the appropriate lack of marketability discount. Each particular security comes with its own facts and circumstances. Accordingly, each restricted stock analysis should stand on its own merit. Option pricing and hedge analyses often are used to estimate the cost to "cure" the lack of marketability and, by extension, the magnitude of the appropriate discount.

H: VALUATION OF EARLY-STAGE TECHNOLOGY COMPANIES

Introduction

Early-stage technology companies have many characteristics that separate them from more traditional, "old-economy" companies. These characteristics make high-technology companies challenging for valuation analysts, security analysts and the investing public to value.

Characteristics of Early Stage Technology Companies

Exhibit 23.8 lists the unique characteristics of these companies and the impact each has on the valuation process.

Reasons Why Early-Stage Technology Companies Need Valuation Services

Early stage technology companies need valuation services for a variety of reasons. The most common reasons are discussed below.

Employee Stock Options

Stock-based compensation is an important piece of the attract-and-retain-employees puzzle. Options (typically with five-year vesting schedules) are granted to employees as part of their compensation package.

ValTip

To avoid excess compensation expense, companies often attempt to set the grant price equal to the underlying common stock's fair market value at the time of issuance.

Exhibit 23.8 Characteristics of Early Stage Technology Companies

	Characteristic	Impact on Valuation Process
1.	Expectation for rapid and longer term "abnormally high growth"	This feature is the primary and most pervasive aspect of early stage companies. A company's growth rate affects the amount, timing, and realization of cash flow, an item of paramount importance to investors and valuation analysts.
2.	Large potential market	To compensate investors for the enormous risk associated with investing in these companies, the entities must be able to demonstrate large potential returns. A large potential market is often necessary to attain large investor returns.
3.	New, often innovative products and services	By definition, these companies need to offer a product or service that is new or innovative. As a result, the time to develop the product or service, the ultimate cost structure achieved, the pricing of the product or service, and the market's acceptance of same are unknown.
4.	Unproven business plan and management team	For the first few years of an early stage company's existence, the valuation analyst may need to rely on management's projections when attempting to estimate the value of the company's equity securities. The business plan on which the projections are based, and management's ability to execute same, are two of the greatest risks valuation analysts must assess.
5.	Complex capital structures	Securing capital is critical to the success of these companies. Capital is often raised by issuing preferred stock, convertible debt, options and warrants. Each of these senior or dilutive securities must be addressed before the value of common equity can be estimated.
6.	Existence of off-balance sheet assets	Technology companies' assets are often intangible in nature and tied to a particular technology and/or labor force. This makes estimating even a "floor value" for these companies quite difficult.

Upon an initial public offering, the Securities and Exchange Commission will closely scrutinize whether the grant price equals fair market value or whether the company must restate (i.e., increase) its compensation expense in the year its options were issued. Management (often at the insistence of the auditors) will engage valuation analysts to assist it in estimating fair market value.

Financial Statement Disclosure

The Financial Accounting Standards Board has issued a number of pronouncements whereby the fair value of certain assets, options, and securities need to be estimated for financial statement disclosure purposes.

Obtaining Capital

Obtaining capital is critical to the success of early-stage technology companies. At each financing event, the value of the company and/or the specific securities issued must be estimated. While the value agreed upon is often a matter of negotiating power and skill, management may require valuation assistance and consulting to help set a reasonable negotiating range.

Estate Planning

It is most employees' and investors' fervent hope that the value of their technology shares experience dramatic future appreciation. The goal of most estate plans is to remove the most rapidly appreciating assets from the estate. Accordingly, early-stage technology securities often are selected to be gifted to family or friends. Valuation analysts are needed to estimate the fair market value of the gifted security for transfer purposes.

Litigation

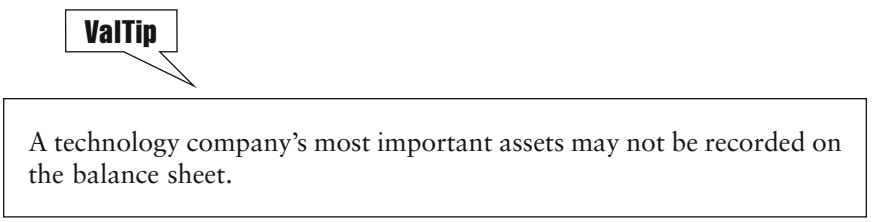
Shareholder disputes, employment-related disputes, contract disputes, intangible asset infringement disputes, and marriage dissolutions are just some of the litigation-related matters for which valuation assistance may be needed.

Valuation Approaches

As with all potentially income-producing assets, there are three general approaches available to estimate the value of early stage technology companies: asset, market, and income. Early-stage technology companies pose unique problems in implementing each of these general approaches.

Asset Approach

The asset approach is the least often used approach when valuing early-stage technology companies. Most often this approach is used in liquidation scenarios, asset impairment studies, or before the entity has achieved any meaningful milestones.



Research and development expenses, programmers' wages, and other similar expenses may need to be referenced when implementing the asset approach.

Determining whether these expenditures have any present or future value is perhaps the most difficult aspect of using the asset approach. Technical obsolescence, inefficient use of resources, or simply the hit-or-miss nature of start-up and early-stage activities all complicate the question of whether dollars spent equates to value built.

Market Approach

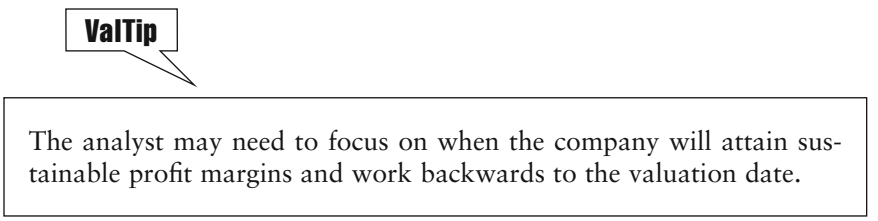
Three general methods are used when implementing the market approach to value early-stage technology companies:

1. Guideline public company method
2. Guideline company transaction method
3. Common or preferred stock investments in the subject company

Refer to Chapter 6 for a more complete discussion of the market approach methods.

Guideline Public Company Method. This method involves identifying publicly traded companies that are sufficiently comparable to the subject company and using their pricing metrics as guidelines for valuing the subject company's securities. Ascertaining where the subject company is in its management, product, and market evolution (i.e., where it is in its life cycle) vis-à-vis any of the deemed guideline companies is an important first step in properly performing this method. The other issues to consider are:

- If one company is public and the other isn't, they are unlikely to be in the same stage of product and market development.
- There is likely to be a wide dispersion among the guideline companies' valuation multiples. Identifying why this dispersion is present and adjusting for it regarding the subject company is difficult.
- The subject company may lack traditional pricing metrics; it may not have revenue, earnings, or debt-free cash flow. Alternative metrics like eyeballs, clicks, users, miles of cable laid, and population service area may be poor proxies for cash flow and may contain little information about when or if sustainable cash flow will be realized.



- The presence of preferred stock in the subject's capital structure can complicate the valuation. Usually, when a technology company goes public, its preferred stock is converted into common stock. The subject company, however, may have four or five separate preferred stock issues outstanding at the valuation date.

Furthermore, each issue may have redemption, conversion, liquidation preference, and voting right features different from the others. An invested capital approach (rather than direct-to-common equity) may initially help to bypass this issue. If the ultimate goal is to value the subject company's common equity, however, invested capital will need to be allocated among debt capital and preferred and common equity.

- The potential future dilution of earnings per share (from the exercise of warrants, options, and convertible securities) may be substantially different for the subject and guideline companies.

Guideline Company Transaction Method. In addition to the issues discussed under the guideline public company method, the complexities present in the guideline company transaction method with technology companies include:

- *Stock-funded acquisitions*. Here the acquirer pays the acquiree in its stock, typically based on an exchange ratio. Relative value may have been established by this, but not necessarily absolute value. Also, lock-up agreements, trading restrictions, and blockage issues all may affect the fair market value of the consideration received.
- *Presence of royalty, earn-out, or other agreements*. These agreements may result in value being dependent on future events. The calculation of the fair market value of the consideration paid is more difficult when these types of agreements are included.

ValTip

As with more traditional companies, the largest impediment to properly using this method in the technology arena is lack of information. Information on what bundle of assets and liabilities were acquired, what the true price and terms were, and whether strategic considerations were present is difficult to obtain.

Common or Preferred Stock Investment in the Subject Company. Often employee option grants occur at or near an external financing, and such financing can be used (with appropriate adjustment) to help estimate common stock fair market value. Even if such a transaction is present, the analyst must be aware of:

ValTip

This is the preferred market approach method if the analyst is fortunate enough to have a contemporaneous transaction in the subject company's securities.

- *The presence of value-creating events that occurred between the investment and the valuation date*. Key additions to the management team, successful completion of a product's beta test, or entering into a key strategic alliance are all examples of events that could cause a technology company's value to increase in a relatively short period of time.
- *A transaction in the company's preferred stock as the base for estimating the value of its common stock*. It is common for pre-IPO investments in technology companies to result in the issuance of preferred rather than common stock. Before using a preferred stock investment to value common stock, the analyst must adjust for differences in the respective securities' rights and restrictions. Typical preferred stock will have:

  - Antidilution provisions
  - Redemption rights
  - Conversion features
  - Dividend and liquidation preference
  - Voting rights or other control attributes
  - Transfer restrictions

  Consideration also should be given to the investment round, the investor board representation, or other control features and differences in marketability between the investment and the subject securities.

  A rule of thumb used to be that, in the early financing rounds, common stock had a value of 10 percent of the preferred stock's value. In later rounds, the value of the preferred and common securities would begin to converge so that by the IPO, they were closer in value. While this general progression has intuitive appeal, it does not necessarily represent reality. Instead, the company's ability to execute its business plan as well as the specific features of the preferred stock tend to dictate whether value rests in a company's preferred or its common stock.

  The bankruptcy-predicting z-score also can be used with option pricing methodology to estimate the difference in value between the common and preferred stock arising from the liquidation preference.[27]

- *The effects of certain rights or restrictions on the security being valued.*

ValTip

Simultaneous gifts made by the same donor in the same security can have different fair market values.

[27] Gregory A., Barber, "Valuing Common Stock in Development-Stage Companies," *Valuation Strategies* (September/October 2000).

For example, a gift of stock that is subject to Rule 144 or underwriter-instituted restrictions will have trading restrictions if made to someone defined as an affiliate and have no trading restrictions if gifted to a nonaffiliate. Consequently, each gift may have a different fair market value. Does this violate the hypothetical willing buyer/seller assumption that is such a key part of fair market value, or is it the attribute of the gifted security that is the ultimate decision maker? Unless a particular characteristic follows the gifted security, it may not affect fair market value.

Income Approach

ValTip

Due to the potential for abnormally high growth in operations, revenue, and cash flows, the income approach discounted cash flow method is the method of choice when valuing early-stage technology companies that have not met material milestones.

Cash flow to invested capital (rather than to common equity) is typically the economic measure selected because of the heavy presence of preferred stock in the capital structures of many technology companies. The presence of "senior securities" (whether debt or preferred stock) often indicates that the valuation needs to be oriented toward invested capital.

Discounted Cash Flow. This section addresses the special considerations associated with performing a discounted cash flow (DCF) method for early-stage technology companies. Please refer to Chapter 4 for a thorough discussion of the income approach.

The starting point for most DCF analyses is the company's business plan and accompanying financial projections. These projections are prepared by management to aid in securing financing and thus may be overly optimistic. Furthermore, many ventures are unique; it is difficult to assess the product's or service's cost structure, selling price, market acceptance, or even viability.

ValTip

One of the first decisions the valuation analyst will face in implementing the income approach is whether to accept management projections as representing the most likely potential outcome or whether multiple scenarios should be projected and a probability of occurrence assigned to each. In theory, the latter approach is best, but, due to practical considerations, most often projection risk is addressed in the discount rate and not through multiple outcome scenarios.

ValTip

Another threshold decision is whether forecast "losses" (particularly in the early years of the forecast with low or no revenue) should be discounted at a rate different from "profits."

Management has more control over how much it spends and when it is spent than it does over if, when, and in what amount revenue and profits will be generated. This fact argues for "losses" being discounted with a rate lower than profits. Another major decision is how to estimate terminal value. Most likely management's projections will not extend beyond five to 10 years. The prospects for continually high growth, however, may extend far past the forecast period. Should a multiple or "staged" DCF model be used? Again, theory says yes, but in the real world there is often little objective data to support forecast assumptions beyond five years or so. The terminal value often (due to interim losses) represents 100 percent or more of a technology company's present value. Whether the terminal value is estimated using an EBITDA, or other, market-based multiple, or whether some variation of the Gordon growth model is used may have a material effect on the concluded value. Many practitioners believe that if terminal value is estimated using a market-based multiple, the entire DCF process is converted from an income approach to a market approach. As with the market approach, potential future dilution in per-share economic measures should be considered.

Discount Rates. Discount rates for early-stage technology companies are generally determined in the same manner as other companies' discount rates except for higher premiums for risks. Venture capital (VC) rates often are used to quantify this additional risk.

ValTip

If venture capital rates of returns, however, are referenced in selecting an appropriate discount rate, the valuation analyst may need to adjust the lack of marketability discount applied later on because many VC discount rates are predicated on investments in nonmarketable securities.

Refer to Chapter 5 for a discussion of the discount rates synthesis process. Exhibit 23.9 lists certain factors more peculiar to technology-company risk assessment and the general effect that items have on the discount rate.

Exhibit 23.9 Discount Rate Considerations

	Enhances Value	Detracts from Value
Quality of story/business plan	Easily understood and credible	Convoluted/Questionable
Management/Board of Directors	Strong and experienced	Incomplete or inexperienced
Size of market	Large and/or growing	Small or flat
Barriers to entry	High	Low
Competitors	Few	Many
Proprietary technology	Yes	No
Achieve plan and financial milestones	Performance as promised	Late or fail to achieve

Real Options

Real option valuation analysis may be one of the most promising new valuation techniques to come along in decades. In simple terms, real option analysis extends financial option valuation theory to nonfinancial "real options." In this manner, options to expand a plant, extend a brand, enter overseas markets, and the like can be quantified and valued. Presently, real option analysis is used extensively in such big-bet industries as oil and gas exploration and biotechnology. With its ability to quantify uncertain future outcomes, real options has a promising future in the technology sector. Real option valuation theory is discussed in more detail in Chapter 23, "J: Real Option Valuations."

Summary

Traditional valuation approaches can and are used to value early-stage technology companies. Special consideration is needed, however, to address the unique factors associated with these high-growth, intangible-intensive entities. Exhibit 23.10 summarizes the available valuation methodologies and lists the more important factors to consider in their implementation.

I: VALUATION ISSUES RELATED TO STOCK OPTIONS

Introduction

A key trend over the past two decades has been the increased importance of intangible assets to the overall value of a company. In the old asset-based economy, tangible assets such as land, buildings, and machinery dominated the value of companies. The ability of a company to generate sales and earnings was mostly a function of the amount of capital equipment and labor available for production. However, as the economy moved from being asset based to being information based, tangible assets became less important. Instead, intangible assets like trademarks, goodwill, and patents, which reflect the "knowledge capital" of a business, became dominant. Since most intangible assets are not capitalized on a company's books unless acquired from a third party, a company's true value is not reflected on its balance sheet. Examples of this intangible value abound in the stock market where it is not uncommon to see companies trading at multiples of their net asset values.

Exhibit 23.10 Valuation Approach/Method

Valuation Approach/Method	Factors to Consider
Asset Approach	• Possibly the least relevant of approaches for other than nascent early stage entities • Difficult to identify and value off-balance sheet, intangible assets
Market Approach	• Analysis of stage of life cycle critical in determining comparability • Lack of traditional pricing metrics complicates process; nontraditional/nonfinancial metrics may not correlate to cash flow prospects • Complex capital structures indicate an invested capital approach may be most appropriate • Stock swaps, earn-outs, and other noncash items affect value of consideration received under the similar transaction method • Differences between the security invested in and the subject security, as well as differences in the actual investors and the hypothetical willing-buyers, must be addressed in the direct investment method.
Income Approach	• Reliance on management forecasts • Use of multiple scenarios or management's best estimate • Different discount rates for "losses" vs. "profits" • Terminal value often comprises 100+ percent of present value
Real Options	• One of most theoretically sound approaches • Extends financial option theory to valuation of management or "real" options • Difficult to identify and model potential outcome of real options

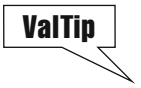
The human intelligence, skill and leadership embodied in a company's workforce are integral components in maintaining and supporting its intangible assets. Incentive compensation plans have evolved to reward activities that increase the value of a company's stock and to promote employee retention. The most direct of these plans use the company's stock or the rights to acquire that stock as a form of compensation.

Both intangible assets and employee stock options have become integral components in the wealth makeup of companies and individuals. Valuing these assets (or liabilities, as the case may be) is undertaken for a variety of purposes, including financial reporting, tax reporting, litigation, transactions, and strategic planning.

Option valuation techniques is one of the fastest-growing areas of financial theory and application. Since options allow for enhanced flexibility in decision making and contingent events, option valuation offers the ability to use models that are

more in tune with the real world. These models are not only applicable to the valuation of stock options but are used to value capital investments, intangible assets, and entire divisions or companies.

Before these valuation techniques are introduced, it is important to understand the characteristics of stock options and the terminology used in describing them. The following paragraphs review those key issues and create the foundation for the work that follows.



Employee stock options (ESOs) are particularly attractive given the ability to defer the recognition of these grants as compensation and the fact that cash is not normally involved. Vesting rights often are embedded in these ESOs to promote employee retention by rewarding longevity.

Definitions

1. *American option.* An option that can be exercised at any time during its life.
2. *Binomial option pricing model.* An option pricing model based on the assumption that stock prices can move only to two values over a short period of time.
3. *Black-Scholes model.* A model used to calculate the value of a European call option. Developed in 1973 by Fisher Black and Myron Scholes, it uses the stock price, strike price, expiration date, risk-free return, and the standard deviation (volatility) of the stock's return to estimate the value of the option.
4. *Call option.* A provision that gives the holder the right, but not the obligation, to buy a stock, bond, commodity or other instrument at a specified price within a specific time period.
5. *Carrying value.* Also know as "book value," it is a company's total assets minus liabilities, such as debt.
6. *Employee stock option (ESO).* Stock options granted to specified employees of a company. These options carry the right but not the obligation to buy a certain amount of shares in the company at a predetermined price.
7. *European option.* An option that can be exercised only at the end of its life.
8. *Incentive stock option (ISO).* A type of employee stock option with various tax benefits granted under Section 422 of the Internal Revenue Code of 1986. These options may be granted only to individuals who are employees of the granting company or a parent or subsidiary of the granting company. A number of restrictions under Section 422 may disqualify an ISO, in which case it becomes a nonqualified stock option.
9. *Long-term equity anticipation securities (LEAPS).* An options contract that expires more than nine months in advance and can last as long as two years.
10. *Nonqualified stock option (NSO).* A type of employee stock option which is less advantageous for the employer from a tax standpoint than an ISO, but which is less restrictive and generally easier to set up and administer. Any stock

option granted to an employee that is not an incentive stock option is, by default, an NSO.

11. *Put option.* A provision giving the holder the right, but not the obligation, to sell a stock, bond, commodity or other instrument at a specified price within a specific time period.
12. *Strike price.* The stated price per share for which underlying stock may be purchased (for a call) or sold (for a put) by the option holder upon exercise of the option contract.

Option Basics

Stock options generally grant the holder the right, but not the obligation, to acquire stock in a corporation. The lack of an obligatory purchase requirement distinguishes stock options from forward or future contracts where final purchase is mandatory. When granted, stock options usually carry an exercise price and a stated option term.

ValTip

Employee stock options are classified as either incentive stock options or nonqualified stock options.

Stock option plans usually are set up to promote the long-term success of the company granting the options by attracting and retaining employees, outside directors, and consultants. Options encourage these individuals to focus on the company's long-range goals by granting them an ownership interest in the company.

Most stock options can be characterized as call options where the holder possesses the right to buy the underlying stock at a specified price and date. In contrast, a put option allows the holder to sell the underlying stock at a specified price and date. Many employee stock ownership plans (ESOPs) contain put provisions (not options) for stock owned by employees of the company.

ValTip

Options that can be exercised during and up to the expiration date are known as American options. Options that can be exercised only upon the expiration date are known as European options.

The strike price, also known as the exercise price, is a fixed price at which the holder may purchase the underlying stock. The exercise price is set upon the granting of the specific option and, under most circumstances, cannot be changed without triggering somewhat onerous reporting requirements.

Most stock options lapse after a certain time period. Incentive stock options cannot have an expiration date more than 10 years after the granting date. However, publicly traded options generally have expiration dates that are measured in months rather than years.

Contract

The purchaser of an option typically is referred to as the option holder. Sellers of options typically are referred to as option writers, since they "write" the option contract. In exchange for the contract, the option holder pays a premium to the option writer. There are seven items specified in the option contract:

1. *Underlying instrument.* The instrument that may be bought or sold.
2. *Contract size.* The number of shares of underlying stock that the contract involves.
3. *Exercise price (or strike price).* The price at which the underlying stock will transact if the option is exercised.
4. *Settlement date.* The date on which money is received for the contract.
5. *Expiration date (expiry).* The date that the option expires.
6. *Style.* The ability to exercise prior to expiry (i.e., American or European).
7. *Premium.* Price paid for the contract.

While options on stock indices, foreign exchange, agricultural commodities, precious metals, futures, and interest rates exist, the discussion in this chapter is limited to stock options granted to employees of the issuing corporation.

Option parameters specify how the option can be exercised. The most common styles are American and European options. American options can be exercised at any time on or before the expiration date. European options can be exercised only on the expiration date. There is a third type of option that is exercisable only on predetermined dates, such as every month, or every quarter. They are referred to as Bermuda options.

ValTip

If not exercised before the expiration date, the option simply expires with no additional value.

Most publicly traded options have expiration dates of less than a year, but the Chicago Board Options Exchange (CBOE) now lists longer-term options on several blue-chip stocks. Known as long-term equity anticipation securities, or LEAPS for short, these options have longer-term expiration dates. In contrast, ISOs normally have a 10-year life.

Descriptive Terminology

Options have a particular vocabulary, especially in describing their status. The following are some of most common terms and definitions related to options.

At the money. The term used when the exercise price and the underlying price are equal.

In the money. The term used when an option's strike price is less than the current price of the underlying stock.

Out of the money. The term used when an option's strike price is greater than the underlying stock price.

Warrants

A warrant is a particular type of call option issued by the company itself. When the warrant is settled, the company issues additional shares, increasing the number of shares outstanding; in contrast, a call option is settled with the delivery of previously issued shares. In addition, the cash flows of the company increase with the exercise of a warrant since the exercise price is paid to the company. Therefore, the dilution created by the issuance of stock is partially offset by the cash received.

As a result of dilution, the value of a warrant may vary somewhat from the value of a call option with identical terms.

Options Trading

Standardized options contracts were first traded on a national exchange in 1973, when the Chicago Board Options Exchange began listing call options. Option contracts now are traded on a number of exchanges, including the CBOE, Philadelphia Stock Exchange, American Stock Exchange, New York Stock Exchange, and Pacific Exchange. Some options trade in the over-the-counter (OTC) markets as well. Over-the-counter stocks do not have standardized terms but are customized for each transaction. Due to the customization, the market is limited, thus increasing the cost of establishing an OTC option contract. Most public option trading occurs on organized exchanges.

Components of Value

Two basic components make up the price paid for an option: intrinsic value and time value. The most obvious component of an option's value is its intrinsic value. This intrinsic value is the amount of money available from the immediate exercise of the option, or the amount the option is in the money. For a call option, this amount reflects the value of the stock less the exercise price.

Volatility is the expected standard deviation of the underlying stock. As volatility increases, so does the probability that the stock will increase (calls) or decrease (puts) by a large enough magnitude to allow the option to be "in the money" before it expires.

To illustrate this concept, consider the holder of a call option. The holder of a call option is not exposed to the downside risk of the stock. The holder's loss if the

stock price declines is limited to the price paid for the call option, no matter what the likelihood that the stock price will decline. However, the more a stock's price can increase over a given period, the higher the option holder's potential profit. This makes the option holder prefer high volatility since it increases the chance that the stock's price will increase above the exercise price.

ValTip

Even without being in the money, an option may have value. This value is created by the possibility that the option could be exercised profitably in the future. Three factors determine time value:

1. Volatility of the stock underlying the option
2. Risk-free rate of interest over the option period
3. Length of time before the option expires

The final determinant of an options price is the risk-free rate. The risk-free rate represents the interest rate that could be earned by investing the exercise price over the time period from option purchase to exercise. Assuming the option holder had perfect knowledge that the stock price would increase, the holder would, in effect, be getting a risk-free loan for the length of the option. For a put option, it is just the opposite, since the option holder gives up the potential to invest.

The length of time before an option expires is a fairly straightforward concept. The longer the period until expiration, the greater the chance the option will end up above or below the exercise price of the underlying stock.

Exhibit 23.11 summarizes the effects that a change in one variable has on the value of an underlying call or put option, all else being equal.

Exhibit 23.11 Effect of an Increase in Variable on Option Value

Variable	Call Option	Put Option
Market value of stock	+	–
Exercise price	–	+
Volatility	+	+
Risk-free rate	+	–
Expiration date*	+	+

*For European options on dividend paying stocks, value may not increase with time due to the dividend effect.

The Divided Effect

Dividends represent a cash return to the investors. A company has the choice of either paying dividends or reinvesting that money in the business. The reinvestment of that cash could allow the business to earn more in the future, thus increasing its

stock price. Paying out the dividend effectively reduces the stock price by the dividend amount on the ex-dividend date (the date that the shareholders of record are determined for dividend payment). By reducing the stock price on the ex-dividend date, the value of a call option decreases and the value of a put option increases.

Valuation Tools

With the introduction of stock options and the components that drive their value, tools have been developed to calculate their value. The following models were designed to value publicly traded options. Each has its own virtues and limitations. Understanding those limitations and adjusting for them is the key to valuing a wide variety of options.

A discussion of the complex mathematical assumptions used to derive these formulas is beyond the scope of this chapter. Software programs of option models are available from numerous sources or can be modeled using the provided equation. The focus here is on the benefits of each model and the selection of appropriate inputs for the option valuation models.

Black-Scholes Model

The most widely recognized option-pricing model is known as the Black-Scholes model. Developed by Fisher Black and Myron Scholes in 1973, the Black-Scholes model was the first model used to calculate a theoretical call price (ignoring dividends paid during the life of the option). The model (shown in Exhibit 23.12) uses the five key determinants of an option's price:

1. Underlying stock price
2. Exercise price
3. Volatility
4. Time to expiration
5. Short-term (risk free) interest rate

While advanced mathematical techniques were used to develop the Black-Scholes model, it is not necessary to understand the formula's derivation in order to use it.

Normally, each component of the formula is readily available. The stock price is based on the closing price of the stock as of the day of valuation or, when the stock is restricted or in a private company, on the estimated price of the stock.

The *exercise price* is given in the contract.

The *time remaining until expiration* can be expressed as a percentage of a year for options with expirations of less than a year or in years for those options with expiries greater than a year.

The *risk-free rate* is approximated by using rates paid for U.S. Treasury bills, matching the length of the option maturity to the U.S. Treasury bill period.

Volatility is the expected volatility of the underlying stock. Volatility is measured using the annualized standard deviation of the underlying stock price movements. Generally, the expected volatility can be calculated from the historical volatility in the stock or the implied volatility from publicly traded stock options.

Exhibit 23.12 Black-Scholes Option Pricing Model

The original formula for calculating the theoretical call option price is as follows:

$$C = S \times N(d_1) - Xe^{-rt} \times N(d_2)$$

Where:

$$d_1 = \frac{\ln\left[\frac{s}{x}\right] + \left[r + \frac{\sigma^2}{2}\right] T}{\sigma\sqrt{T}}$$

$$d_2 = d_1 - \sigma\sqrt{T}$$

C	=	Call price
S	=	Stock price
X	=	Exercise price
T	=	Time remaining until expiration
r	=	Current risk-free interest rate
σ	=	Expected annual volatility of stock price
ln	=	Natural logarithm
N(x)	=	Standard normal cumulative distribution function
e	=	Exponential function

When using historical volatility, it is generally best to review the latest 12-month period although longer or shorter periods are sometimes used. When long-term options exist or nonrecurring events have occurred, adjustments may be made to reflect expectations of future performance.

When the stock is lightly traded or not publicly traded, it may be necessary to use an average of the historical volatilities of similar stocks in the marketplace as a proxy for anticipated volatility. It is important to average the volatilities and not calculate volatility based on the standard deviation of a portfolio of these guideline stocks, since diversification among the stocks will lower volatility and not be reflective of the anticipated volatility of an individual stock. Industry volatilities also can be used.

Implied volatility is calculated for publicly traded options by adjusting the Black-Scholes formula to solve for volatility. Assuming identical options, this implied volatility should represent the market's indication of expected volatility.

As with historical volatility, when the stock is lightly traded, it may be necessary to use an average of the implied volatilities of similar stocks in the marketplace.

ValTip

A key limitation of the Black-Scholes model is that it was developed to price European call options in the absence of dividends.

The *natural logarithm*, the *standard normal cumulative distribution function* and the *exponential function* are all mathematical constants.

The Black-Scholes model also gives a reasonable price for an American call. Earlier, we introduced the two components to option value, intrinsic value and time value. The early exercise of an American option would forfeit the time value component.

Adjusting Black-Scholes for European Puts. The Black-Scholes formula can be adjusted to calculate the value of a European put option by applying the put-call parity theorem. The concept of put-call parity is that the payoff for a put could be replicated using a combination of call options, shorting stock, and borrowing. A general formulation of put-call parity is:

$$P = C - S + Xe^{-rt}$$

Applying this to the Black-Scholes option pricing formula and simplifying the equation, the formula for valuing a put option is:

$$P = S \times N(-d_1) + Xe^{-rt} \times N(-d_2)$$

While this formula adjusts the basic Black-Scholes formula for a European put, it does not address the value of an American put. Refer back to Exhibit 23.11. One of the components of time value is the risk-free rate. The risk-free rate has a negative value effect on a put option. So there is the possibility that an American put option will have negative time value, thus making early exercise valuable.

Adjusting Black-Scholes for Dividends. As previously discussed, the Black-Scholes model assumes that dividends are not paid. Since some stocks do pay dividends, the model needs adjustment to properly value the options on these stocks. To understand this adjustment, one needs to review the effect of dividends on stock price.

Basic valuation theory states that a stock is worth the present value of its future cash flows. Cash flows retained in the business are reinvested, creating higher potential future cash flows. When dividends are paid, the stockholder receives the cash and can determine whether to reinvest it in the company or in other ventures. The stockholder is equally well off in either case, but cash has come out of the company, reducing its value directly in line with the amount of dividend paid.

There are two methods for adjusting the Black-Scholes model for dividends. For short-lived options, the option's underlying share price could be lowered by the present value of the dividends. When valuing a longer-lived option, the Black-Scholes model can be adjusted for the expected long-term dividend yield of the stock. The formulas in Exhibit 23.13 show the Black-Scholes model adjusted for dividends.

While the formulas adjust the Black-Scholes model to estimate the value of European options in the presence of dividends, American options are not specifically addressed. The ability to exercise early and avoid the lost value of the stock due to dividends (calls) or take advantage of the decline (puts) has additional value over and above the European option.

Adjusting Black-Scholes to Price Warrants. The difference between a warrant and a call option is the dilution created by the warrant, which gives the warrant a lower value than an option with the same terms. The effect of dilution can be calculated to derive the value of the warrant. The formula is:

$$\text{Warrant Value} = \frac{1}{\left[1+\frac{\text{Number of Warrants}}{\text{Number of Shares}}\right]} \times \text{Value of Option Equivalent}$$

The option equivalent is the value of an option with the same terms as the warrant.

Exhibit 23.13 Dividend Adjusted Black-Scholes Option Pricing Model

The original formula for calculating the theoretical call option price is as follows:

$$C = S_a e^{-bT} \times N(d_1) - Xe^{-bT} \times N(d_2)$$

$$P = -S_a e^{-bT} \times N(-d_1) + Xe^{-bT} \times N(-d_2)$$

Where:

$$d_1 = \frac{\ln\left[\frac{s}{x}\right] + \left[b + \frac{\sigma^2}{2}\right] T}{\sigma\sqrt{T}}$$

$$d_2 = d_1 - \sigma\sqrt{T}$$

S = Stock price
X = Exercise price
T = Time remaining until expiration
b = Cost of carry (the risk-free rate minus the dividend yield)
σ = Expected annual volatility of stock price
ln = Natural logarithm
N(x) = Standard normal cumulative distribution function
e = Exponential function

The Binomial Model

The Black-Scholes model allows for the rapid calculation of option value. In most instances, with the proper adjustments, it yields a fairly accurate estimate of value to standardized stock options. However, its accuracy is more limited in certain situations, the most notable of which is an American put option. A more robust option valuation model was created in 1979 by John Cox, Stephen Ross, and Mark Rubinstein, when they developed a binomial model for pricing stock options. The binomial model breaks down the time to expiration into time intervals, or steps. At each step, the stock price will either move up or down. How much the stock will move up or down is related to the stock's volatility and the option's time to expiration. Charting these possible movements at each step produces a binomial tree representing all of the possible paths the stock price could take during the life of the option. This makes the binomial model more rigorous to apply than the Black-Scholes model.

The option prices are calculated at each step of the tree, working from expiration to the present. The option prices at each step are calculated using the option

prices from the previous step of the tree using the probabilities of the stock prices moving up or down, the risk-free rate and the time interval of each step. Any adjustments are put into the model as needed to reflect ex-dividend dates or the optimal exercise for American options. Exhibit 23.14 is a pictorial representation of the binomial tree with the stock price from time 0 through time 3.

Exhibit 23.14 Binomial Tree

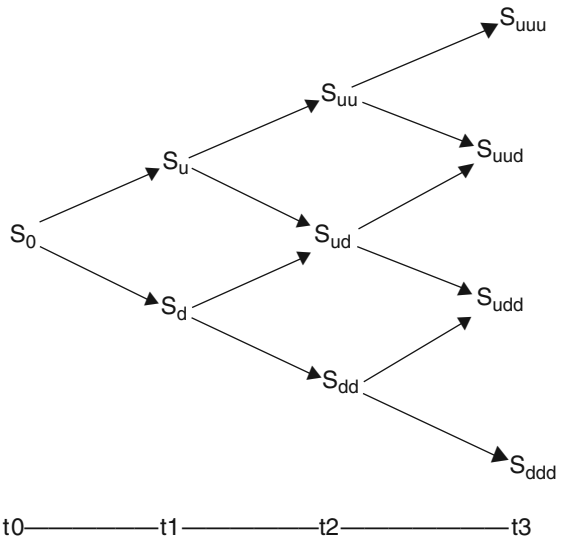


Exhibit 23.15 Binomial Model Formulas

Cox-Ross-Rubinstein approach	Equal Probability approach
$p = \frac{e^{r_f Dt} - d}{u - d}$	$p = 0.5$
$u = e^{s\sqrt{\sigma}}$	$u = \frac{2e^{r_f \sigma t + 2s\sqrt{\sigma t}}}{e^{2s\sqrt{\sigma t}} + 1}$
$d = \frac{1}{u}$	$d = \frac{2e^{r_f \sigma t}}{e^{2s\sqrt{\sigma t}} + 1}$

The variables are:

t	=	Total time in years
n	=	Number of periods
Δt	=	Length of time period in years = t/n
σ	=	Estimated annual volatility
r_f	=	Current risk-free interest rate
u	=	Up ratio
d	=	Down ratio

At each time period, there is either an upside or downside movement to the stock. At time 1, there are two possibilities: The stock price either went up or down. At each time, the number of possibilities increases.

The inputs into the binomial model are the same as for the Black-Scholes model. The volatility input is used to calculate both the upside and downside movement and the transitional probability in the Cox-Ross-Rubinstein approach. This approach does not work when volatility is low and interest rates are high since the calculation can lead to transitional probabilities greater than 100 percent. The binomial model overcomes this problem by assuming the transitional probability is 50 percent. Exhibit 23.15 shows the general formulas for determining the upside and downside movement and transitional probability with each approach.

Privately Held Stock Options

Privately held stock options typically take the form of warrants that are issued or sold to third parties or employee stock options.

Warrants

Warrants can be given to debtors as incentive for the restructuring of debt, sold with other equity in units, or sold individually to raise capital. In some cases, the company will structure the warrants so they can be publicly traded. More often, warrants are structured to the specific desires of the purchaser, or their transfer is restricted.

ValTip

Warrants often are sold in connection with other financial instruments as a "sweetener" to enhance the attractiveness of the placement of the financial instrument they are bundled with or to get favorable terms on another financial instrument.

Employee Stock Options

Employee stock options have become a common part of employee and executive compensation, especially in high-technology firms that are usually short on cash but long on promise. Unlike publicly traded options, ESOs typically have a much longer life. Additionally, ESOs typically have a number of provisions that restrict their transfer, exercise, and ownership rights.

Benefits of Employee Stock Options

Employee stock options have a number of benefits for the corporation. They help the company recruit and retain employees by providing financial incentive while not requiring an initial outlay of cash. For start-up firms, this is a highly attractive feature. Also, ESOs can be used as part of the compensation strategy for senior executives. The Revenue Reconciliation Act of 1993 limited the deductibility of cash

salaries above $1 million. Stock options, however, qualify as "objectively determined performance-based compensation." Properly structured, the company can deduct the intrinsic value of the option in the year it is exercised, thus avoiding the limitation on cash compensation. Finally, ESOs are intuitively appealing in that they reward employees based on the performance that stockholders are most interested in, the appreciation in the stock itself.

Incentive Stock Options versus Nonqualified Stock Options

ESOs are characterized as incentive stock options or non-qualified stock options.

An incentive stock option (ISO) is an option granted to an employee of a company to purchase company stock at a specified price for a specified period of time that qualifies for favorable tax treatment under § 422 of the Internal Revenue Code. A nonqualified stock option (NSO) is any option that does not qualify for favorable tax treatment under IRC § 422.

With an ISO, there are restrictions on how the option is structured and how it can be transferred. Generally, with an ISO, there are no tax consequences upon the receipt or exercise of the option, although the difference between the fair market value of the stock and the exercise price are alternative minimum tax adjustments. Upon the sale of the underlying stock, the employee will generally record tax based on the capital gain. The company cannot take a tax deduction for any related compensation expense so long as the ISO is disposed of in a qualifying disposition.

Requirements for ISOs include:

- The stock option may be granted only to an employee who must exercise the option while employed or no later than three months after termination of employment (one year if the employee is disabled).
- The stock option must be an option to purchase stock of the employer corporation or the stock of a parent or subsidiary corporation.
- The stock may be capital stock of any class of the corporation, including voting and nonvoting common or preferred stock. Special classes of stock exclusively issued to and held by employees is permissible.
- The option must be granted under a written plan , the ISO agreement, specifying the total number of shares that may be issued and which employees are eligible to receive the options.
- The plan must be approved in a manner that complies with the charter, bylaws, and state laws that regulate stockholders' approval within 12 months before or after plan adoption.
- Each stock option issued under the ISO agreement must be written and must list the restrictions placed on its exercise. It must set forth an offer to sell the stock at the option price and the period of time that the option will remain open.

- The option must be granted within 10 years of the date of adoption or shareholder approval, whichever date is earlier.
- The option must be exercisable only within the 10-year period after grant.
- The stock option exercise price must equal or exceed the fair market value of the underlying stock at the date of the grant.
- The employee may not own more than 10 percent of the voting power of all stock outstanding at the time of the grant unless the exercise price is at least 110 percent of the fair market value of the stock and the option is not exercisable more than five years from the time of the grant.
- The ISO agreement must specify in writing that the ISO cannot be transferred by the option holder other than by will or by the laws of decedent and cannot be exercised by anyone other than the option holder.
- The aggregate fair market value of the stock bought by exercising the ISOs that are exercisable for the first time cannot exceed $100,000 in a calendar year.

To qualify for favorable tax status, the stock must be disposed of after the statutory holding period. The ISO statutory holding period is the later of two years from the date of granting of the ISO or one year from the date the options were exercised. If the disposition qualifies, an employee receiving an ISO recognizes no income upon its receipt or exercise. In the case of a disqualifying disposition of an ISO, the employee recognizes ordinary income in the amount the fair market value of the stock exceeds the option price. The employee also realizes a capital gain which is the difference between the fair market value of the stock on the date of exercise and the disposition proceeds.

In contrast, the employer does not receive a deduction with respect to the granting of the ISO; if a disqualifying disposition occurs, the employer will be able to deduct the amount realized by the employee as ordinary income. The employer is not subject to any withholding requirement for the amount of ordinary income recognized from the disqualifying disposition. In addition, that ordinary income is not considered taxable income for FICA or FUTA purposes.

An NSO has no restrictions on its structure or transfer. An NSO is taxable to the employee on grant if:

- The option is publicly traded or is transferable by the optionee.
- The option is exercisable immediately in full by the optionee.
- Neither the option nor the underlying property is subject to any restrictions that have a significant effect on the option's value.
- The purchase fair market value of the option privilege is readily ascertainable.

Generally, options on stock that is not actively traded will be deemed not to have a readily ascertainable value. If the NSO meets these requirements, ordinary income is recognized based on the value of the option less any amount paid for the option. Since the ordinary income has been recognized previously, any further tax comes in the form of capital gains based on the selling price of the stock (less any amount paid for the exercise of the stock) and any amount included in income upon the option's grant. If the fair market value of the option is not readily ascertainable upon grant, no tax consequences are recognized until the exercise of the option. At that point, the difference between the amount paid for the stock and the fair market value of the stock received is reported as compensation income. The company takes a deduction for ordinary income equal to the ordinary income realized by the employee.

Vesting

Employee stock options typically have vesting rules associated with them. Under vesting, employees gain an increasing right to the stock option awards granted to them based on their seniority or, occasionally, a performance factor. The four most common types of vesting include:

1. Equal annual vesting
2. Cliff vesting
3. Variable annual vesting
4. Hybrid annual/other vesting

In equal annual vesting, the most common type of vesting, an employee's options become exercisable at a fixed percentage each year. Under cliff vesting, all of an employee's options from a grant become exercisable at one specific date. In variable annual vesting, an employee's options become exercisable each year based on some individual formula. Finally, if an employee's options first vest after one year and then vest on a more frequent schedule, this is characterized as hybrid annual/other vesting.

Valuation Considerations

Valuing nonpublicly traded stock options is not a defined science. Significant differences in the terms and rights underlying nonpublic stock options versus their publicly traded counterparts can materially affect the value. In many cases, determining value puts the analyst in a theoretical world, since many of these options cannot be sold based on the terms of the options contract itself. In other cases, a sale may have significant disincentives that would make a willing seller unwilling to sell the option.

Despite the inability to sell the instrument itself, there are benefits to holding the option. Many times it is necessary to value the benefits under the assumption that the benefits could be exchanged.

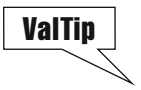
Before discussing valuation issues related to ESOs, as with any valuation, the analyst must appropriately define the assignment:

- Follow valuation procedures to define the assignment appropriately so that the right level/standard of value, valuation date, and procedures are used
- Gather appropriate support
- Analyze the data in a meaningful and appropriate manner before arriving at a conclusion and writing the report

Reasons for Valuing

For publicly traded options, like publicly traded stock, a valuation is not necessary when the publicly traded price accurately reflects value. However, in some situations there are sufficient differences between the publicly traded instrument and the instrument being valued to necessitate a valuation. For instance, when a corporate insider, a person in a position to control the business affairs of the corporation or who has access to inside information, holds an option, the stock that is associated

with the option may be restricted, thus affecting the stock's value as well as the option's. In other cases, there may be no public market for the options and/or the stock, such as ESOs in private firms.

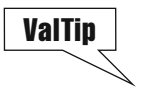


The causes driving the need for a valuation are fairly universal: litigation/divorce, management planning, tax oriented (gift or estate), transaction oriented, or financial reporting.

One reason ESOs are valued is to estimate the value of the common stock in a business. The ESO reflects a right of ownership against the company since the company must issue shares to meet the ESO obligation. By taking the enterprise value derived and subtracting debt, one arrives at an indication of value of the equity. The current stockholders and the option holders share the rights to the equity. By subtracting the value of the options, the value to the current stockholders can be estimated. It may also be necessary to consider tax benefits related to the types of ESOs outstanding in this calculation.

Volatility

As noted earlier, volatility is based on the anticipated return of an underlying stock. This volatility can be estimated from the historical or anticipated volatility of a public stock. For an option that is not publicly traded but where the company has publicly traded options with different terms, the implied volatility of those other options can be used to estimate the volatility of the private option. For instance, in valuing an option with five months remaining to expiration, the average of the implied volatility of a four-month option and six-month option may be appropriate.



If the underlying stock is lightly traded or not publicly traded, volatility can be estimated using a representative sampling of guideline companies or an industry benchmark.

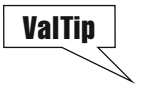
A key exception to the determination of volatility occurs when a valuation is done under Statement of Financial Accounting Standards No. 123, *Accounting for Stock-Based Compensations,* where a volatility of zero is applied in calculating the fair value of an ESO. Since most option models require an input for volatility, an extremely low volatility, 0.0001, can be used for the calculation.

As discussed earlier, it is important to average the volatility calculations of these guideline companies as opposed to creating an index of the companies and calculating the volatility of that index. The diversification of the index will smooth the

standard deviation and result in a volatility measure that may not represent the anticipated volatility of an individual stock.

When using guideline companies to calculate volatility, begin by selecting a group of companies using the same factors used in selecting guideline companies for pricing multiples. If the stock is not publicly traded but has been valued using the market approach, the guideline companies used in that analysis would be a good starting point for volatility analysis.

When selecting guideline companies in a market approach valuation analysis, it is important to be familiar with the operations and markets of the subject company, its size, growth prospects, liquidity, profitability, turnover, and leverage. When selecting guideline companies for volatility estimation, it is also important to know the history of the price movements and any intervening events that may have affected those movements.



If an intervening event is identified in the analysis, it may be appropriate to exclude it from the volatility.

When the event is historical, exclude it by calculating volatility for the time interval before the event and after the event. If the event is anticipated, use implied volatilities from options expiring before the event or exclude the company's volatility from the average.

It also can be useful to compare how volatility has changed from one time period to the next, especially when industries or companies are in flux or evolving rapidly. Trends in volatility, including growth, decline, seasonality, and cyclicality, can materially affect the expectations of future volatility. This also can be useful when the subject company is at an earlier stage of development than the publicly traded companies.

Finally, it may be necessary to adjust the analysis for the anticipation of events, such as a public offering of the stock. As of the end of 2002, there was no consensus on how to adjust for this. Clearly, a consideration of the chance of going public and the potential option payoffs for going public versus remaining private must be key among the factors considered.

In arriving at a conclusion of the volatility to apply, as when arriving at a conclusion of value, it is necessary to weigh all the evidence and the strengths and weaknesses of each part of the analysis to reach a reasonable conclusion. Since volatility has the greatest potential effect on the price of an option, it is important to give significant attention to the development of this variable.

Marketability

Marketability has two potential effects on the value of stock options.

1. There are marketability issues if the underlying stock that the option is based on is either not marketable or if its marketability is restricted.

2. There may be a reduction in value due to the lack of marketability if the option itself is not marketable.

In the first situation, there is the lack of marketability of the underlying stock. The current value of the stock is an input in both the Black-Scholes and binomial option pricing models. Being a derivative, the option is tied to that stock's value on an as-if-publicly-traded basis or a discounted value reflecting the lack of marketability. If there is a way to structure the transaction to avoid the lack of marketability and allow the option holder to receive unrestricted, publicly traded shares, then the as-if-publicly-traded value of the stock is the appropriate input. If there is not a way for the holder to receive unrestricted shares, then the discounted stock price may be the appropriate input.

The final consideration is the marketability of the option itself. There are no studies available regarding the lack of marketability of closely held stock options.

In the end, the consideration of an appropriate discount for the lack of marketability is a matter of the analyst's informed judgment. In arriving at an estimate, it is important to take into account the value components of an option, its terms, and the characteristics of the markets for publicly traded options. The value of an option is made up of both an intrinsic value and time value, and since the option can be exercised to receive the underlying stock, the intrinsic value may not be as affected by the lack of marketability of the option itself, (assuming the options are vested). Therefore, the marketability analysis may focus more on the time value component.

Vesting

One of the last components to consider in valuing ESOs can be one of the most important. Vesting determines the ability to gain the rights to the stock option awards. If the terms of the vesting agreement are not met, then the employee will never receive ESOs subject to vesting.

There are two general schools of thought on vesting:

1. The option does not exist until the vesting requirements have been met.
2. An unvested option is an asset just as future pension proceeds are deemed an asset.

By reviewing the facts and circumstances of each case, the likelihood that the option will vest can be established and adjustments made to reflect the current value of the option. For valuing individual grants, this leads to a probability-weighted approach to valuation. When valuing the pool of options that a company

has given, it is also possible to look at the historical ratio of options granted to options vested to estimate the number of stock options that will vest for the entire pool of options.

J: REAL OPTION VALUATIONS

Introduction

Managerial decisions often have the same characteristics as an option. An option gives the holder the right, but not the obligation, to perform some action. Having this right provides management with flexibility in decision making that can create value not captured by traditional valuation methods. The process of identifying the value associated with management decisions is real option analysis. The very simplified example below illustrates this concept. This is a highly complex area.

Example (Illustration Only)

Digicell, a manufacturer of telecommunications equipment, has the opportunity to acquire the rights to the patented technology of a competitor who is currently in financial difficulty. The patented technology is a "hands-free" device that allows an individual to operate a cellular phone through voice commands. Digicell believes that the technology has important practical applications and is currently five years ahead of any competing technology.

To proceed with the manufacturing of the patented technology, Digicell would have to invest $50 million to ready the technology for market. Digicell's management has prepared a set of projections indicating that the technology will generate $10 million in free cash flow each year for at least the next five years. They assume an 18 percent rate of return, based on the risk of the project. The estimated present value (PV) of the expected cash flows is:

NPV of the technology	=	–$50 million + $10 million (PV of an annuity for 5 years at 18%)
	=	–50 million + 31.3 million
	=	–$18.7 million

The net present value (NPV) of the technology is a negative $18.7 million. Should Digicell invest in the patented technology now or wait?

This situation raises a number of questions. What is the value to Digicell of having time to gather information about the potential market for the technology? What is the value to the company to have the flexibility to make capital investment decisions later rather than now? What is the value to be able to test-market conditions before making a decision to invest in additional plant capacity? Each of these questions represents decisions that are made on a daily basis by corporate managers involving millions, and sometimes billions, of dollars. The fundamental question that these managers need answered is: Are these projects creating value?

Managers sometimes go forward with a project based on a "gut feeling" even when traditional discounted cash flow analysis shows a negative net present value.

The reason for this is that traditional discounted cash flow methods do not capture the value that is associated with managerial flexibility.

ValTip

Traditional discounted cash flow models may not determine the value of flexible managerial decision making.

While DCFs may not capture all of the value associated with managerial flexibility in decision making, a financial model does capture this value. Real option analysis is based on the use of option pricing models applied to managerial decisions.

ValTip

Real options is a managerial decision making tool that utilizes financial option pricing models such as the Black-Scholes and applies them to "real" rather than just specific financial decisions.

Many managerial decisions follow the structure of options. In the example, Digicell has the right to acquire and further develop and manufacture the voice-activated "hands-free" device but not the obligation to do so. In many respects this is similar to a call option scenario where the investor pays for the rights to invest should market conditions prove optimal or to decline to invest if market conditions are poor. The patented technology could serve as a call option for Digicell, where Digicell could purchase it now as a "right" to further investment, should it appear appropriate to do so later.

In this example using traditional valuation methods , the DCF analysis indicates a net present value of the project of less than $0. But this analysis fails to consider the value of the flexibility of waiting to invest further. Real options analysis captures this value, allowing better decision making.

Management often encounters the need to apply real options in strategic decisions:

- *Timing*. Delay the decision until more information is available.
- *Flexibility*. Present value of the ability to switch to a different course of action as future circumstances dictate (e.g., a cogeneration power plant that can switch between oil and coal, depending on market prices).
- *Operating*. The value of the ability to expand on contract operations.
- *Growth*. The current value of future payoffs. An example is the value of Amazon.com generated by its potential to sell other products in addition to books.

Option Basics

An option provides the investor with the right, but not the obligation, to buy or sell a specific amount of an underlying asset during a specified period of time (see Chapter 23, "I: Valuation Issues Related to Stock Options"). The right to buy an asset is called a call option. The right to sell an asset is called a put option.

The value of an option is determined by a number of variables:

- Current value of the underlying asset
- Volatility in the value of the underlying asset
- Strike exercise price
- Time to expiration
- Risk-free rate

Underlying Asset

A key component of the value of an option is the current value of the underlying asset. Changes in the value of the underlying asset affects the value of the option on that asset. A call option gives the holder the right to buy an asset at a fixed price within a fixed time period. Therefore, an increase in the value of the underlying asset increases the value of the call option. A put option gives the holder the right to sell an asset at a fixed price within a fixed time period. Therefore, an increase in the value of the underlying asset decreases the value of the put option.

Volatility of the Value of the Underlying Asset

The greater the volatility in the value of the underlying assets, the greater the value of the option on that asset. Options were designed to provide a hedge against asset volatility. Therefore, the more chance an asset will exhibit wide variations in price, the more valuable protection against those changes (i.e., options) will be.

Strike Price

The strike or exercise price is the fixed price at which the option holder has the right to trade in the underlying asset (buy in the case of a call option or sell in the case of a put option). The higher the strike price, the less valuable the call option becomes. The higher the strike price, the more valuable the put option becomes.

Time to Expiration

The longer the time to expiration of the option, the more valuable both call and put options become. The rationale being that the longer the time to expiration, the greater chance the value of the underlying security will be at an advantageous position for the holder of the option prior to the time of expiration.

Risk-Free Rate

Since an option carries an up-front cost, the holder of an option has an opportunity cost in purchasing the option. The level of interest rates also affects the present value of the exercise price of option. An increase in the risk-free rate increases the value of a call option and decreases the value of a put option.

Black-Scholes Model

The Black-Scholes model is currently the most recognized and widely used theoretical model for the valuation of options. Black and Scholes assumed that it is possible to set up a hedged, or riskless, position consisting of owning a share of stock and selling the option on the stock. Provided that the options are priced correctly, any price movements in the stock would be offset by opposite movements in the option value. Therefore, the investor is at no risk and the investment should yield a risk-free rate of return.

The value of a European call option (one exercisable only on the call date) by the utilization of the Black-Scholes formula is:

$$C = SN(d_1) - Xe^{-r(T)}N(d_2)$$

$$d_1 = \frac{\ln (S/X) + (r + (\sigma^2/2))(T)}{\sigma ((T)^{\wedge 1/2})}$$

$$d_2 = d_1 - \sigma ((T)^{\wedge 1/2})$$

Where:

C	=	Value of option
S	=	Market price of underlying stock
X	=	Exercise price
e	=	Base of natural logarithms
N(d)	=	Cumulative density function (area under normal curve)
ln	=	Natural Logarithm
r	=	Current risk-free investment/maturity same as expiration of option
T	=	Time to option's expiration, in years

The call option pricing formula produces prices that vary directly with time and volatility, and inversely with interest rates. The Black-Scholes model is the basic mathematical model that is often used to estimate the value of real options (see Chapter 23, "I: Valuation Issues Related to Stock Options").

Moving from Financial Options to Real Options

Exhibit 23.16 is a comparison of terms of a financial option versus a real option:

Exhibit 23.16 Options Comparison

	Financial Option	Real Option
Underlying asset	Stock price	PV of project returns
Volatility	Variance of stock returns	Variance of project returns
Exercise price	Contractual	Investment
Time to maturity	Contractual	Period to make decision
Ownership rights	Dividends forgone	Cash flow forgone
Interest rates	Risk free rate	Risk free rate
Time to exercise	American or European	American or European

Real Option Steps

Four steps are involved in performing a real options analysis:

1. Identify the proper question
2. Select the analytical technique
3. Identify the inputs
4. Make conclusion

Identify the Proper Question

The first step in performing a real option analysis is to frame the questions to be answered. Which decision or series of decisions will create the most value for the project and the company? Is there value in delaying a decision until better information is available? Is there value in the flexibility of changing the technology at a later date? Does the company have flexibility to expand or contract capacity as market conditions change?

Select the Analytical Technique

Once the analyst is comfortable that a real option may add value, the next step is to select an analytical technique to estimate the value added by a real option. Again, the most common analytical technique is the application of the Black-Scholes option-pricing model.

ValTip

Several other analytical techniques may better suit an individual problem. These models include financial models, dynamic programming, and Monte Carlo simulation.

Identify the Inputs

The next step in applying real option analysis is to identify the inputs to the model.

Digicell needs the following inputs to the Black-Scholes pricing model:

- Exercise price = PV of cash flows from the technology if developed now or $31.3 million
- Stock price = initial investment = $50 million
- Time to expiration = time period to make decision = 5 years
- Volatility = standard deviation of returns for typical telecommunications equipment manufacturer = 0.40
- Risk-free rate = U.S. Treasury yield for next five years, assumed to be 5 percent

The value of the real option to acquire the technology in our example can be estimated as:

$$d_1 = \frac{\ln (31.3/50) + (5\% + 0.40^2/2)\,(5)}{0.40\,(5)^{1/2}}$$

d1	=	0.2030
d2	=	$0.2030 - 0.40\,(5)^{1/2}$
d2	=	- 0.6914
N (d_1)	=	0.5804
N (d_2)	=	0.2447
Call Value	=	$31.3\,(0.5804) - 50e^{-5\%\,(5)}\,(0.2447)$
	=	$8.64

The rights to the technology are worth $8.64 million.

These inputs indicate that value of the real option to delay the decision to build the manufacturing plant until better information about the marketplace becomes available is $8.64 million.

The net present value in the example indicates that if the project were undertaken today through an investment in both refining the technology and building the plant, the project is worth -$18.7 million. This analysis takes into account the risk reflected by the uncertainty of the marketplace and competing technologies. What if some of the uncertainty can be eliminated? What would the value of the project be today under these conditions?

Conclusion

Management has the ability to delay the investment in the new plant so Digicells's management can ascertain more realistic information about the market before investing the $50 million in the new plant. The value created by having the flexibility to delay the project until more information is available can be estimated through real option analysis.

K: MAXIMIZING SHAREHOLDER VALUE

Introduction

One of the paramount goals of corporate management is to create shareholder value. The development and application of a value creation strategy is complex, involving the three basic concepts:

1. What is value?
2. How is value determined?
3. What can be done to create additional value?

These abstract concepts can be explored through financial analysis and modeling, which can be used as a basis for managerial decisions to plan for future value creation.

Valuation analysts are uniquely qualified to assist corporations with value creation strategies because they understand what value is, how value is determined, and they know the value drivers of a particular company. However, the focus here is on what can be done to create additional value and how analysts can assist corporate managers to answer this question.

Many public and private corporations have specific programs in place to measure and maximize their shareholder value. Some of the more prominent names, such as Coca-Cola, Georgia Pacific, Sprint, and other such "shareholder value creation" companies, have developed specific programs to assist management in making the best decisions to maximize shareholder value.

For a value creation program to succeed, it must be designed to provide better managerial decision making as well as maximize shareholder wealth. In a properly designed program, strategic decisions such as capital investment and acquisitions are tied to value creation. Management at all levels should be accountable for value creation, which solidifies corporate goals and creates management cohesion. Since value per unit of capital is measured, capital is used more efficiently. A well planned shareholder value creation program provides a framework to create a cohesive well disciplined management team. Analysts can be indispensable in developing these shareholder value creation programs.

Economic Value Added

One well-known value creation program used by many companies is economic value added or "EVA."

The EVA concept was developed into a specific product and popularized by the consulting firm Stern Stewart as a trademarked program in the 1980's. It expanded a concept that was developed in the early 1920s at General Motors and later refined by Alfred Rappaport at Northwestern University.[28, 29]

The concept behind EVA is that shareholder value is created by maximizing "economic profit" or the returns to the shareholders after taking a "charge" for the capital investment of the company.

The proponents of EVA believe that economic profits are a more appropriate return of shareholder investment rather than accounting profits. EVA practitioners believe that if the returns are positive after taking a charge for invested capital, then

[28] Israel Shaked, Allen Michel, and Pierce Learcy, "Creating Value Through E.V.A.—Myth or Reality." *www.strategy-business.com/stragegy/97404/page2.html.*

[29] Alfred Rappaport, *Creating Shareholder Value: The New Standard for Business Performance* (New York: The Free Press, 1986).

the company is creating shareholder value. If the returns are negative after taking a charge for invested capital, then the company is destroying value. Stern Stewart expanded the concept of measuring economic profits into a specific program of managerial decision making designed to maximize economic profit.

While EVA is one of the most widely known shareholder value creation programs, a variety of other such programs are based on the concept of identifying and maximizing the economic profit of a company. Some of them are:

- Value-Based Management
- Cash Value Added
- Shareholder Value Management

These programs are similarly based on the idea that value is created if the return on investment is greater than the cost of capital.

Economic Profit

Each of these shareholder value creation programs is based on a particular concept of economic profit and its measurement. Many financial analysts believe that economic profit is a more appropriate measurement of returns on shareholder investment and thus can be used as a basis for value creation.

ValTip

Economic profit in its most simple form is free cash flow generated by a company less its return on investment by the shareholders in the company. Economic profits take into consideration the opportunity cost of the investment.

Most financial analysts understand that conventional accounting-based measures of company performance, such as net profit, return on equity, and earnings per share, usually do not tell the complete story. The limitations of accounting-based measurement are recognized in valuation analysis, which measures performance based on cash flow. The concept of economic profits extends cash flow-based performance measurement by taking into consideration the cost of capital.

Example (Illustration Only)

Company A and Company B are identical except that Company A uses equipment that is fully functional but is also older and fully depreciated, while Company B uses equipment that was acquired last year for $1 million and is being depreciated over a five-year period. The operating performance of both companies is the same except for depreciation and interest expense (Exhibit 23.17). Using traditional accounting-based performance measures, Company A's net profit margin and return on equity would be higher than Company B's measures (Exhibit 23.18). Does this mean that

Company A is creating more value for its shareholders than Company B is creating for its shareholders? Probably not. If financial performance is measured in terms of gross cash flow (it is usually debt free net cash flow but this quickly illustrates the concept), Company B actually may have more cash flow when the tax effects of depreciation are considered (Exhibit 23.19).

Exhibit 23.17 Operating Performance

	Company A	Company B
Revenue	$1,000,000	$1,000,000
COGS	500,000	500,000
Gross Margin	500,000	500,000
S,G, & A	200,000	200,000
Interest Expense	16,000	40,000
Depreciation	-0-	200,000
Profit Before Tax	284,000	60,000
Taxes @ 40%	113,600	24,000
Net Income	$ 170,400	$ 36,000

Now assume that Company A has invested capital of $1 million capitalized at a market weighting of 20 percent debt and 80 percent equity. Also assume that Company B has invested capital of $1 million and is weighted at market rates of 50 percent debt and 50 percent equity. Each company has a pretax cost of debt of 8 percent and a cost of equity of 20 percent to its shareholders (see Exhibits 23.20 and 23.21). (For illustrative purposes, we have assumed equal costs of equity even though Company B probably has higher equity costs due to its higher debt. However, Company B's overall cost of capital would still be lower.) What is the economic profit of each company?

In this example, the economic profit of each company is derived by subtracting the cost of invested capital from its cash flow. As shown in Exhibit 23.22, Company B generates $112,000 in economic profit compared to $1,000 generated by Company A.

Exhibit 23.18 Returns

	Company A	Company B
Net Income Margin	17.0%	3.6%
Return on Equity	21.3%	7.2%

Exhibit 23.19 Gross Cash Flow

	Company A	Company B
Net Income	$ 170,400	$ 36,000
Plus: Depreciation	-0-	200,000
Gross Cash Flow	$ 170,400	$ 236,000

As a further demonstration of how conventional accounting measures may distort measures of return, Company A's net income is $170,400 compared to Company B's net income of $36,000. Yet Company B generates much greater economic profit than Company A. Company B is creating more value for its shareholders, even though its operating performance is identical to Company A. Traditional accounting measures are limited in measuring shareholder value creation. Economic profit may be a much better measure of value creation.

Exhibit 23.20 Invested Capital and Returns

	Company A		Company B	
	Invested Capital	Returns on Invested Capital	Invested Capital	Returns on Invested Capital
Equity	$ 800,000		$ 500,000	
Cost of Equity @ 20%		$ 160,000		$100,000
Debt	$ 200,000		$ 500,000	
Cost of Debt @ 8%		$ 9,600(1)		$ 24,000(2)
Total Invested Capital	$1,000,000		$1,000,000	
Total Cost of Capital		$ 169,600		$124,000

(1) ($200,000 x .08) x (1 – .40) = $9,600 after tax
(2) ($500,000 x .08) x (1 – .40) = $24,000 after tax

Exhibit 23.21 Weighted Average Cost of Capital

	Company A			Company B	
Equity	80% x 20.0%	=	16.0%	50% x 20.0%	10.0%
Debt	20% x 4.8%	=	.96%	50% x 4.8%	2.4%
			16.96%		12.4%
	Rounded		17.0%		12.5%

Exhibit 23.22 Economic Profit

	Company A	Company B
Gross Cash Flow	$ 170,400	$ 236,000
Less: Cost of Capital	169,600	124,000
Economic Profit	$ 800	$ 112,000
Rounded	$ 1,000	$ 112,000

How to Maximize Shareholder Value

Based on the previous EVA analysis, there are four general ways to increase shareholder value:

1. *Earn more profit without using more capital.* Value is created or increased when a company implements efficiencies and reduces its operating costs without increasing its investment in new assets. For example, a company could add a second or third shift without a significant capital expenditure, as opposed to building another plant.
2. *Use less capital.* Many companies use this method to create value. For example, a company can create a production schedule that requires less inventory and lower costs associated with fixed assets and working capital.
3. *Invest capital in higher return projects.* A company can focus on business lines that generate the highest return after the total capital costs are deducted. For example, a company contemplating an additional product line should compare its capital costs with its anticipated return on that capital when deciding whether to invest in the project.
4. *Lower the cost of capital.* A company can use an optimal capital structure that lowers the required return on capital. For many private companies, this means increasing the level of lower-cost debt in the capital structure.

Steps in Creating Shareholder Value

Four steps are involved in creating shareholder value:

1. Identify the value drivers
2. Estimate the cost of invested capital
3. Estimate the economic profits
4. Tie management decisions to value creation

Value Drivers

One of the first steps in creating shareholder value is to understand what drives the current value. Identifying the value drivers of a company includes both financial analysis and analysis of management strategy.

Exhibit 23.23 Common Value Drivers

- Unique technology
- Customer relationships
- Cost advantages
- Trade names or trademarks
- Access to capital

Value drivers are the characteristics that are specific to a company that allows the company to maximize its cash flow generation. Financial analysis is useful in identifying the financial characteristics of the value drivers. In addition, management should ask what the company's competitive advantages are. As an example,

management can analyze the margins of different product lines or certain types of customers to ascertain the value drivers that allow for competitive advantages. Exhibit 23.23 lists some common value drivers.

Unique Technology. Having a proprietary technology that is protected from potential competitors allows a company to increase revenue both through customer growth and higher pricing. The increased revenue from this value driver results in greater cash flow to the shareholders than the shareholders would otherwise receive, thus increasing value. The proprietary technology is the value driver for these companies.

Customer Relationships. Many companies have close relationships with their customers. These relationships drive the company's value. For example, automobile manufacturers subcontract the production of certain parts to companies that specialize in the design and manufacture of that particular part. The part manufacturer requires close collaboration with the automobile manufacturer, its customer. This customer relationship drives the parts manufacturer's value.

Cost Advantages. Some companies use cost advantages as a value driver. Southwest Airlines is a pioneer in no-frills, low-cost air travel and has been quite successful financially. Southwest normally flies routes that are not dominated by a larger carrier so the routes have lower gate costs. Southwest also focuses on a quick turnaround at the gates, which reduces the time its airplanes are on the ground. The less time the planes are on the ground and the more time they are in the air, the more revenue the planes are generating. These policies spread Southwest's fixed costs over a larger revenue base. Lower costs means more cash flow to the shareholders, increasing shareholder value. Southwest Airlines' value driver is lower fixed costs than larger carriers.

Trade Names or Trademarks. A trade name can be a tremendous value driver. The Coca-Cola Company has a proprietary formula to make soft drinks that has remained virtually unchanged for nearly a century. Coke's strategy has been to let others manufacture (bottle) its products and to focus primarily on its brand. At the most basic level, Coke's most valuable assets are a formula and a trade name, which are Coke's competitive advantages. With these competitive advantages, Coke has become one of the largest companies in the world and owns one of the most, if not the most, recognized trade name in the world. Clearly, one of Coke's value drivers is its trade name.

Access to Capital. Access to capital is also a value driver for many companies, particularly those that are planning for strong growth. Many high-growth companies partner with venture capital firms and other types of investment funds to finance their growth. The access to capital allows growth to proceed at a greater pace. However, it is high-priced capital.

The other side of access to capital is that the lower the cost of that capital, the higher the value of the company, all else being equal. Those companies that have access to immediate, lower-cost capital have an advantage over competitors that pay more for capital access.

Cost of Capital and Amount of Capital Employed[30]

Measuring both a company's true cost of capital and its total capital employed is challenging. Most analysts understand the cost of debt capital, which is the interest that is paid on borrowings on an after-tax basis. A key consideration is the measurement of the cost of equity capital employed by the company. For a publicly traded company, the cost can be measured with widely accepted financial models and publicly available information. However, the cost of equity capital is more subjectively measured in a privately held company. As discussed elsewhere in this book, public guideline companies and other market proxies can provide a reasonable estimate of a privately held company's cost of capital.

ValTip

For EVA purposes, developing a measure of a company's total cost of capital will involve using the actual capital structure of the company rather than an optimal capital structure, since the goal of measuring shareholder value is analyzing the actual cash flow returns to the shareholders less the actual opportunity cost of equity capital.

A second analysis concerns the amount of capital tied up in the company, which may differ from what appears on the balance sheet. For example, a company may benefit for years from expenditures for research and development and for employee training, but accounting principles usually require these items to be expensed at the time they were incurred. Existing balance sheets and income statements may have to be adjusted to reflect these and other similar items to provide a more accurate measure of the total capital employed in a company.

Estimating Economic Profits—Example Continued (Illustration Only)

We previously discussed how conventional accounting measures might distort the measure of adding value for the shareholders. Proponents of programs that create shareholder value argue that a better measure of corporate performance is economic profits rather than traditional accounting-based measures. Economic profits are the measure of cash flow returns to the shareholders after deducting the opportunity cost of capital. The idea behind using economic profits as a measure of shareholder return is that value is created only if the returns to the shareholder are greater than the cost of capital. If returns are less than the cost of capital, then value actually is destroyed.

As shown in Exhibits 23.24 and 23.25, Companies A and B have the same operating performance. Let's assume both companies have revenue of $1 million. Both companies' revenues are expected to grow at 10 percent per year with a long-term growth rate of 6 percent. The operating performance before depreciation and interest expense is expected to be exactly the same for both companies.

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[30] James R. Hitchner and Mark L. Zyla, "Valuers Can Do More for Clients Than Determine Value" *CPA Expert* (Winter Issue, 1996), p. 14.

There are only two differences between the two companies:

1. Company A's equipment is fully depreciated while Company B recently purchased new equipment for $1 million and is depreciating the equipment over a five-year period.
2. The capital structure of Company A is financed with 80 percent equity and 20 percent debt, while Company B is financed at 50 percent equity and 50 percent debt.

Exhibits 23.24 and 23.25 show the expected operating performance of each company. Which company is creating more value for its shareholders?

Exhibit 23.24 is a projection of cash flows to the shareholders of Company A. Exhibit 23.25 is projection of cash flows to the shareholders of Company B. Notice in Exhibit 23.24 that net income for Company A is projected to be $170,400 for the year 20XX. In Exhibit 23.25 net income for Company B for the year 20XX is projected to be only $36,000. However, the projected economic profit for each company tells a completely different story. The projected economic profit for Company A for the year ending 20XX is expected to only be $10,400. The projected economic profit for Company B is projected to be $136,000. (In this example we are using net cash flow versus gross cash flow to capture future working capital and capital expenditure needs.) Even though Company B has much less net income than Company A, it is creating much greater value for its shareholders. Why is that?

Two differences between the companies have a tremendous impact on the difference in the value creation between them.

1. The depreciation expense of Company B impacts its net income but not its cash flow generation. The greater the cash flow generation, the greater the value.
2. Company B has a much lower cost of capital than Company A due to its higher level of debt in the invested capital. A lower cost of capital means that the opportunity cost of capital in the calculation of economic profits is lower, resulting in a higher level of economic profits.

Exhibits 23.24 and 23.25 are modified versions of the familiar discounted cash flow analysis. The analysis is modified to estimate economic profits or returns after taking into consideration the opportunity cost of capital. Rather than discounting free cash flows to present value, the analysis discounts the economic profits to present value. The sum of the present values of the economic profits is the additional value created for the shareholders under the assumptions in the analysis.

How can this information be useful for management when planning strategies to create value for shareholders? This type of analysis can be useful in modeling whether strategies or additional investments either create or destroy shareholder value. This analysis also can be useful in determining how a company can create additional value and how much additional value is created or destroyed. All one has to remember are the four basic tenets to value creation:

Exhibit 23.24 Company A—For the Years Ending December 31

		20XX	20X1	20X2	20X3	20X4	Perpetuity
Revenue		$1,000,000	$1,100,000	$1,210,000	$1,331,000	$1,464,100	$1,551,946
COGS		500,000	550,000	605,000	665,500	732,050	775,973
Gross Margin		500,000	550,000	605,000	665,500	732,050	775,973
S,G,& A		200,000	220,000	242,000	266,200	292,820	310,389
Interest Expense		16,000	16,000	16,000	16,000	16,000	16,000
Depreciation		—	—	—	—	—	200,000
Profit Before Tax		284,000	314,000	347,000	383,300	423,230	249,584
Taxes @	40%	113,600	125,600	138,800	153,320	169,292	99,834
Net Income		170,400	188,400	208,200	229,980	253,938	149,750
Debt-Free Net Income		180,000	198,000	217,800	239,580	263,538	159,350
Plus: Depreciation		—	—	—	—	—	200,000
Less: Change in NWC			10,000	11,000	12,100	13,310	8,785
Less: Capital Expenditure		—	—	—	—	—	200,000
Free Cash Flow		180,000	188,000	206,800	227,480	250,228	150,566
Less: Cost of Capital		169,600	169,600	169,600	169,600	169,600	169,600
Economic Profit		10,400	18,400	37,200	57,880	80,628	(19,034)
Discounted @	16.96%	8,892	13,451	23,250	30,930	36,838	(79,349)
Sum of Present Values		34,012					

Assumptions				
	Period 0–4	Perpetuity	Change in NWC (% of Change in Revenue)	10%
Growth Rate	10%	6%		
COGS (% of Revenue)	50%		Invested Capital	$ 1,000,000
S,G,& A (% of Revenue)	20%		WACC	16.96%

Exhibit 23.25 Company B—For the Years Ending December 31

		20XX	20X1	20X2	20X3	20X4	Perpetuity
Revenue		$ 1,000,000	$ 1,100,000	$ 1,210,000	$ 1,331,000	$ 1,464,100	$ 1,551,946
COGS		500,000	550,000	605,000	665,500	732,050	775,973
Gross Margin		500,000	550,000	605,000	665,500	732,050	775,973
S,G,& A		200,000	220,000	242,000	266,200	292,820	310,389
Interest Expense		40,000	40,000	40,000	40,000	40,000	40,000
Depreciation		200,000	200,000	200,000	200,000	200,000	200,000
Profit Before Tax		60,000	90,000	123,000	159,300	199,230	225,584
Taxes @	40%	24,000	36,000	49,200	63,720	79,692	90,234
Net Income		36,000	54,000	73,800	95,580	119,538	135,350
Debt-Free Net Income		60,000	78,000	97,800	119,580	143,538	159,350
Plus: Depreciation		200,000	200,000	200,000	200,000	200,000	200,000
Less: Change in NWC			10,000	11,000	12,100	13,310	8,785
Less: Capital Expenditure		—	—	—	—	—	200,000
Free Cash Flow		260,000	268,000	286,800	307,480	330,228	150,566
Less: Cost of Capital		124,000	124,000	124,000	124,000	124,000	124,000
Economic Profit		136,000	144,000	162,800	183,480	206,228	26,566
Discounted @	12.40%	120,996	113,980	114,645	114,954	114,952	231,371
Sum of Present Values		810,899					

Assumptions

	Period 0–4	Perpetuity
Growth Rate	10%	6%
COGS (% of Revenue)	50%	
S,G,& A (% of Revenue)	20%	

Change in NWC (% of Change in Revenue)	10%
Invested Capital	$ 1,000,000
WACC	12.40%

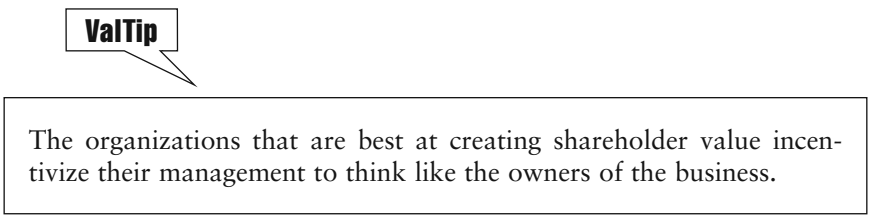
1. *Earn more cash flow without using more capital.* Both Company A and Company B have the same level of invested capital of $1 million. Yet Company B has a higher level of generation of free cash flow than Company A does. Company B's ability to generate more free cash flow per unit of invested capital creates a higher level of additional value for its shareholders.
2. *Use less capital.* Both Company A and Company B use the same level of capital. However analysts can use the economic profits model to analyze returns to the shareholders under scenarios utilizing less capital.
3. *Invest in higher-return projects.* The economic profit model is useful to compare the returns on various projects to allow management to invest in the projects that have higher returns per unit of capital employed.
4. *Lower the cost of capital.* Company B has a weighted average cost of capital of 12.4 percent compared to the weighted average cost of capital of Company A of 17.0 percent, thus creating a greater level of value for its shareholders. The economic profit model shows how the cost of capital influences the value creation ability of each company.

Analysts can assist management of corporations with their value creation strategies by keeping in mind these four basic tenets for value creation and using them to model managerial strategic or investment decisions.

Management Decisions to Value Creation

While analysts can use the economic profits model to analyze managerial decisions as to their level of value creation, value is not actually created until implemented by management. The corporations that are most successful in utilizing value creation programs have one key step in common: They tie managerial decisions to the creation of value.

In these organizations the fundamental question that is asked in each strategic decision is: How does this add value? Line managers understand the need to create value in these organizations and also have the authority to make value-creating decisions.



One way to incentivize management is to tie their compensation to increases in shareholder value. Many of the best-performing companies that utilize shareholder value creation tie value creation to management compensation either through management bonuses or stock options. Aligning compensation to value creation causes management to "think like owners" to create shareholder value. A well designed management compensation system allows management to share in the wealth that they create.

To successfully tie management compensation systems to value that managers create, management must have the authority to affect the implementations of a value-creating strategy. Think about the four general tenets that can be used to create value. These decisions can be made not only on a companywide basis but also on a reporting unit level. Value creation therefore can be measured not only on a companywide level but also at each reporting unit level. Management compensation can be tied to value creation at the reporting unit as well.

Management must have the authority to make decisions that create value. In other words, management must have the authority to make capital budgeting discussions, capital investment decisions, and cost–of-capital decisions, and to increase returns on capital.

Conclusions

One of the primary goals of management in most companies is to create shareholder value. The idea of creating shareholder value seems simple enough; however, in practice, it may be difficult to implement. One difficulty is that standard accounting measures may not adequately measure the returns to shareholders. Many proponents of shareholder value creation programs use a concept of economic profits to measure returns to shareholders. Economic profits are cash flow returns to shareholders after the consideration of the opportunity cost of capital.

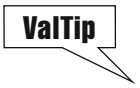
There are four general ways to increase shareholder value:

1. Create more cash flow without using more capital
2. Use less capital
3. Invest in higher-return projects
4. Lower the cost of capital

A well-designed value creation program incorporates each of these basic tenets into its everyday management decision-making process. Management is incentivized to make decisions based on the impact of increasing shareholder value.

One key to a successful value creation program is to tie management compensation to value creation. Management must, however, have the authority to make the appropriate decision to create value. The results of their decisions can be meas-

ured using the concept of economic profits, and their compensation can be tied to the value creation results of their decisions.



Valuation analysts are uniquely qualified to assist management with the design and implementation of value creation strategies. Analysts can expand traditional valuation methodologies to incorporate the concept of economic profits to analyze, model and measure how value is created. Analysts can be indispensable not only in measuring what the value is today, but in assessing how to increase value tomorrow.

For more information on maximizing shareholder value see Tom Copeland, Tim Koller, and Jack Murrin, *Valuation: Measuring and Managing the Value of Companies*, 3rd ed. (New York: John Wiley & Son, Inc., 2000).

CHAPTER 24

Valuation Views and Controversial Issues: An Illustration

The purpose of this chapter is to highlight and discuss important concepts and views including numerous controversial issues that permeate business valuation. The following case presents selected excerpts from a business valuation report that was originally, in its entirety, in full compliance with the Uniform Standards of Professional Appraisal Practice. The excerpts from the report presented here are only to form the structure to present various topics. As presented, it is not a full or comprehensive report and should be viewed only as a teaching tool to present the various issues. Several sections of the report were purposely eliminated or truncated. At various points throughout the modified report we will stop and present Valuation Views (VV) that explain various concepts, as well as controversial issues.

This report format is one of many that analysts can use in presenting business valuations. All schedules have been omitted as they are not necessary for explaining the VVs. Some of the terms, numbers, sources and other data have been changed for ease of presentation. Furthermore, the initial view presented may not always be the best view in a particular valuation.

THE REPORT

Mr. Tom Profit
LEGGO Construction, Inc.
123 Builders Drive
Anycity, Anystate 54321

Dear Mr. Profit:

The object of this valuation is to estimate the fair market value of 100 percent of the common stock in LEGGO Construction, Inc., ("LEGGO" or the "Company"), on a non-marketable, control interest basis, as of December 31, 1999, for management purposes and internal planning.

VV

Is There Such a Thing as a Nonmarketable Controlling Interest?

Most analysts believe that there is no such thing as a "nonmarketable" controlling interest. Their point is that a 100 percent controlling interest is as marketable as any company of like kind that wants to be sold by the owners.

(continues)

Others say that it can be nonmarketable depending on the underlying valuation methodologies used. For example, when using either the capitalized cash flow ("CCF") or discounted cash flow ("DCF") method in the income approach, analysts often rely upon Ibbotson data to develop their discount and cap rates. These rates are based on public company rates of return that include the almost instant liquidity of the stock. Even a 100 percent controlling interest in a closely-held company lacks this level of liquidity. Therefore, some analysts will take a discount to adjust for this difference. An entire company cannot be sold in just a few days as public stock can be.

In our opinion, the fair market value of 100 percent of the common stock in LEGGO Construction, Inc., on a nonmarketable, control basis, as of December 31, 1999, for management purposes, is (rounded):

$5,800,000

The standard of value used in this valuation report is fair market value. *Fair market value* is defined as follows:

> The price at which property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both having reasonable knowledge of the relevant facts.[1]

VV

Fair Market Value to Whom?

The standard of value here is fair market value. The question then is fair market value to whom? The standard answer is to a "hypothetical buyer." Furthermore, the seller is not LEGGO's current owner but a "hypothetical seller" of the shares. However, on a practical basis, it may be hard to ignore whom the seller is, since it is the client. The company may want the value to reflect the results of its management goals and philosophies. Assuming a "typical" hypothetical management team would operate the company in a similar manner, then the value is fair market value. However, if the company operated differently from others, then investment value may be the more appropriate standard of value.

Valuation is not an exact science subject to precise formula. Rather, it is based on relevant facts, elements of common sense, informed judgment, and reasonableness. Our scope was unrestricted and our methodology and analysis complied with the Uniform Standards of Professional Appraisal Practice. In addition, this valuation report and the values determined herein cannot be used or relied on for any purpose other than for internal management planning.

[1] Treas. Reg. Sec. 25.2512-1 (Gift Tax Regulations).

VV

Restrictions on the Use of the Valuation Purpose

Valuation analysts usually put restrictions on the use of the valuation. Values can differ depending on the purpose of the valuation. LEGGO management wants to know the value of the whole company to do internal planning. This value is on a stand-alone basis reflecting the results of how the current management team runs the company. The valuation could have been for another purpose such as sale to a strategic buyer, minority gifts for tax purposes, an ESOP, or a dissenting rights case. Each of these probably would result in different values. For instance, there might be a control premium for the strategic buyer; the gifts of minority interests might have large discounts for lack of control and for lack of marketability; the ESOP value may have a higher value than the gift value but lower than the stand-alone value and much lower than the strategic value; and the dissenting rights value would differ depending on how that particular state treats discounts. The same company can have quite different values under differing circumstances.

The enclosed narrative valuation report and exhibits, as well as all documents in our files, constitute the basis on which our opinion of fair market value was determined. Statements of fact contained in this valuation report are, to the best of our knowledge and belief, true and correct. In the event that facts or other representations relied on in the attached valuation report are revised or otherwise changed, our opinion as to the fair market value of the common stock of the Company may require updating. However, Valking LLP has no obligation to update our opinion of the fair market value of the common stock of the Company for information that comes to our attention after the date of this report.

No partner or employee of Valking LLP has any current or contemplated future interest in the Company or any other interest that might tend to prevent them from making a fair and unbiased opinion of fair market value. Compensation to Valking LLP is not contingent on the opinions or conclusions reached in this appraisal report.

Very truly yours,

Val Dude, CPA/ABV, ASA, CBA, CVA
VALKING LLP

INTRODUCTION

Description of the Assignment

Valking LLP, was retained by Mr. Tom Profit to determine the fair market value of 100 percent of the common stock in LEGGO Construction, Inc., (the Company) on a nonmarketable, control basis, as of December 31, 1999, for management purposes and internal planning.

Summary Description and Brief History of the Company

The Company was incorporated in 1978 in the State of Anystate. The Company is a closely-held subcontractor whose revenues are predominately earned from sewer

and waterline construction, primarily in southern Anystate. The Company is now structured as an S corporation.

VV

Tax-Effecting S Corporations?

The valuation of S corporations and other pass-through entities could be the most controversial issue in business valuation today. The main issue is whether to tax-effect S corporation income. There really are four options:

1. Tax-effect the income at corporate rates
2. Tax-effect the income at the personal rates
3. Do not tax-effect the income at all
4. A combination or hybrid of the other options

The tax court has dealt with the matter of tax-effecting S corporations in several recent court cases, (*Adams v. Commissioner*, T.C. Memo 2002-80; *Heck v. Commissioner*, T.C. Memo 2001-34; *Wall v. Commissioner,* T.C. Memo 2001-75; and *Gross v. Commissioner*, T.C. Memo 1999-254, *affd.* 276 F.3d 333 (6th Cir. 2002)). The most famous is *Gross v. Commissioner*, where the court opined that taxes should not be assumed in valuing the shares of the company. The value of the shares was much higher since pre-tax income was essentially capitalized at what appears to be after-tax discount rates.

It is important to remember that a court case decision is based on the facts and circumstances of that particular case. In addition, court decisions are ultimately the result of the legal strategy employed, decisions by the taxpayer and the quality of the attorneys and experts. The *Gross* case has created much discussion in the valuation community. Let us look at some of the underlying details of the case.

- The size of the blocks of stock (a series of gifts) being valued were 0.63 percent and 0.95 percent of the total outstanding shares respectively.
- The shares were subject to a shareholders' agreement that restricted their transferability to family members and furthermore prevented transfer to anyone who would jeopardize the Company's S corporation status. The Tax Court found that the shareholders agreement was designed to protect the Company's S corporation status. Also, the shareholders had a separate written agreement to be taxed as an S corporation for at least 10 years.
- The Tax Court recognized that the probability of losing the S corporation status should be a factor in the valuation, but the taxpayer did not present any evidence about the probability of such a loss in this case.
- The taxpayer's valuation expert admitted at trial that there was "growing controversy" in the appraisal community about tax-effecting S corporations.
- The Company had a history of strong growth and a policy of distributing most of its income to its shareholders. There was no evidence that the Company would not be able to make shareholder distributions sufficient to cover the personal tax obligations of shareholders in the future.

The unique facts and circumstances of the *Gross* case are not generally applicable to other valuations. Some other general observations follow:

We clearly should not project the Court's findings in *Gross* to every valuation that involves an S corporation. The facts and circumstances in other cases may be significantly different.

It seems that the valuation community has taken the *Gross* opinion, which is about very small minority interests, and discussed its implications for controlling interests in S corporations. We can not automatically make that leap. The nature of a hypothetical buyer of a very small minority interest in a family-controlled business is almost always different from that of a control buyer. (The business in the *Gross* case was a Pepsi distributor.)

A number of articles have been written based on the Tax Court's published opinion, despite the fact that the court gave little explanation for its opinion. The Appellate Court's opinion in 2001 presents a lot more information about the facts and circumstances of the case. The appellate opinion is available at *www.gofcg.org/gross*.

The outcome of the case presented by the taxpayer at trial in *Gross* was based on a specific strategy that may not apply in other situations.

While the *Gross* decision has reenergized the discussion in the valuation community about tax-effecting pass-through entities, its application to every S corporation situation has been overstated. Nevertheless, the ongoing discussion about tax-effecting pass-through entities is a direct result of having no direct empirical evidence to prove that S corporations are more valuable than C corporations. For example, there is no evidence that EBIT multiples for acquiring companies are any different if the company is a C corporations than if it is an S corporation.

Further, there is no discussion of the risk of *not* receiving distributions to pay personal taxes currently. In the *Gross* case, there was a history of those distributions being paid. If there is no history of distributions then the risk appears to be similar to a C corporation interest that makes no distributions/dividends.

Valuation professionals need to be careful when defining a control interest for an S corporation. All shareholders must agree to an election and a single shareholder could undertake an action that would terminate the election. Control is 100 percent agreement for the purpose of determining S corporation status. Control does affect the payment of shareholder distributions. Also, the effect of shareholder agreements could make the issue of control less relevant to S or C status if all current and future shareholders must agree to the S status. (Resulting diminished marketability is a separate issue.)

Taken to its conclusion, if S corporations are so valuable, wouldn't any rational fully informed buyer who could make an S corporation election do so? Therefore shouldn't all C corporations that could become S corporations be valued at a pretax level to capture this value? Why are there so many C corporations when many of these could elect S status?

It is also important to keep in mind that the appeal decision in *Gross* seemed to indicate that the court thought it must choose either 0 or 40 percent, ignoring any middle ground which theoretically could represent a pool of hypothetical buyers that included both S corporations and C corporations.

The Company's customers generally consist of area contractors, developers, and local governments. The Company obtains most of its business through bidding competitively with other general contractors. The Company's management believes that customers contract with the Company due to its solid reputation and its competitive bids. The two largest customers of the Company include Brazen General Contractors and the City of Anycity, Anystate.

Employee relations have been harmonious with minimal turnover. All employees of the Company are unionized with the exception of several office workers. Currently, the economic climate in the market and industry are good. The Company has five to six competitors that are similar in size and nature.

Ownership and Capital Structure of the Company

The Company is legally structured as a closely held S corporation. As of the date of valuation, there were 5,000 shares of common stock outstanding structured as follows:

Name	Shares Owned	Percentage of Ownership
Tom Profit	4,250	85%
Gary Profit	250	5%
Susan Profit	250	5%
Michelle Profit	250	5%
Total	5,000	100%

VV

Discounts and Ownership Interests

We are valuing 100 percent of the common shares in LEGGO. The percentage ownership of individual shareholders is not an issue here. However, let us assume that we are valuing the 85 percent interest of Tom Profit, or the 5 percent interest of Susan Profit. First the 85 percent interest; would the "pro rata" value be different than 85 percent of the entire value of the company? The answer is yes, it would be different. Although Tom still controls the corporation with his 85 percent interest, there is the possibility of a nuisance value attributable to the other three 5 percent interests. Tom doesn't have complete control and could, at some time in the future, be exposed to a dissenting rights action or a shareholder oppression action. Although Tom has a great deal of power, it is not absolute.

As to 5 percent ownership interest of Susan's, the "pro rata" value would typically be lower than 5 percent of the value of the entire company. To the extent that Tom is taking out "excess" compensation or perquisites, the value to Susan and the other two 5 percent owners would be diminished. There is less cash flow, thus less value. This is the discount for lack of control implicit in the reduction of cash flows due to Tom's personal motivations.

However, there are exceptions. What if Tom ran the company totally "clean"? What if his compensation and perks were normal and at market rates? What then is the discount for lack of control? Some analysts would argue that there should be no minority discount since the controlling shareholder is running the company to the benefit of all shareholders in proportion

to their individual ownership. In this situation and at the current time in the company, there is little argument that control value and minority value are the same. This is completely predicated on "business as usual." It assumes that Tom or any other hypothetical controlling stockholder will keep the current policies forever. Well, forever is a very long time. What if Tom gets into personal financial trouble and needs more cash or Tom dies and someone else steps into his ownership interest? Will that new control owner continue the current policies of the company? No one can answer that question since we do not know who the new owner may be or what their motivations are. This creates uncertainty and uncertainty increases risk, which increases the discount rate which decreases value. As such, many analysts will argue for some level of discount, albeit a lesser amount than if the controlling owner was taking monies out of the business for personal gain.

Standard of Value

The standard of value used in this report is fair market value. *Fair market value* is defined as:

> The price at which property would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both having reasonable knowledge of the relevant facts.[2]

Among other factors, this valuation report considers elements of valuation listed in the Internal Revenue Service's Revenue Ruling 59-60, which "outlines and reviews in general the approach, methods, and factors to be considered in valuing shares of the capital stock of closely held corporations . . ."[3] Specifically, Revenue Ruling 59-60 states that the following eight factors should be carefully considered in a valuation of closely held stock[4]:

1. *The nature of the business and history of the enterprise from its inception.* The Company was incorporated in 1978. The Company is engaged primarily as a sewage and waterline subcontractor. The Company has grown since its inception, and its customers have remained loyal.
2. *The economic outlook in general and condition and outlook of the specific industry in particular.* The consideration of the economic outlook on both national and regional and local levels is important in performing a valuation. How the economy is performing has a bearing on how the Company performs. Overall, the outlook is positive.
3. *The book value of the stock and the financial condition of the business.* The Company has a relatively strong balance sheet with a majority of its assets in

[2] *Ibid.*
[3] Internal Revenue Service, Revenue Ruling 59-60.
[4] *Ibid.*

three categories: cash, contract receivables, and fixed assets. The fixed assets consist primarily of construction equipment and vehicles.

4. *The earning capacity of the company*. The Company's compound growth rate from 1995 to 1999 was approximately 4 percent measured in revenues. The Company has demonstrated a good ability to generate profits.
5. *The dividend-paying capacity*. The Company has made distributions equal to the amount of the shareholders' respective tax liabilities in the recent past and likely will continue this trend into the future.
6. *Whether or not the enterprise has goodwill or other intangible value*. It is generally acknowledged that goodwill often is measured by the earnings ability of an enterprise being valued. Goodwill can be broadly defined as those characteristics which induce customers to continue to do business with the Company and to attract new customers.
7. *Sales of the stock and size of the block to be valued*. There have been no recent sales of stock of the Company that would provide an indication of value during the period being analyzed.
8. *The market prices of stock of corporations engaged in the same or a similar line of business having their stocks actively traded in a free and open market, either on an exchange or over the counter.* The market approach was considered in this valuation. A search for guideline companies that are similar in nature and size to the Company was performed.

VV

Reliance on Guideline Public Companies

There are two choices in regard to the Guideline Public Company Method ("GPCM") of the Market Approach:

1. Use it
2. Do not use it

Some analysts believe that you should use the GPCM in almost every valuation. If there are no direct comparable companies, or guideline companies that are somewhat similar, they will use companies from other industries that possess similar investment characteristics and risks. Others believe that the GPCM should be used only when there are reasonably similar guideline public companies. Revenue Ruling 59-60 states that it should be "considered," not necessarily applied, in all valuations. The current consensus is to always consider the GPCM and to use it in situations where the public companies are reasonably similar.

Sources of Information

Ten sources of information used in this appraisal include the following:

1. Audited financial statements for the years ended March 31, 1995 through December 31, 1999.

2. *Stocks, Bonds, Bills, and Inflation, 1999 Yearbook*, published by Ibbotson Associates.
3. *The Federal Reserve Bank* for the 20-year maturity rate on 30-year bonds as of December 31, 1999.
4. 1996 to 1999/2000 Editions of *Benchmark Statistics and Ratios* (Fictitious).
5. *The National Economic Review* published by Mercer Capital Management, Inc., for the fourth quarter of 1999.
6. *The Beige Book* published by the Federal Reserve Bank as of December 8, 1999.
7. *www.xls.com* web site for public company information.
8. *www.hoovers.com* web site for public company information.
9. *Pratt's Stats* Online Comparable Transactions Database.
10. IBA Comparable Transactions Database.

Valking LLP has relied on the above sources but has not provided attest services in regard to any of the sources. Val Dude, a financial analyst with Valking LLP, interviewed management of the Company and made a site visit.

NATIONAL ECONOMIC OUTLOOK[5]

VV

Using National Economic Data

While it may seem that the national economic outlook is applicable only to companies that operate nationally, the national economic outlook should be analyzed and reviewed in all business valuations. In many industries, conditions at the national level will influence regional and local economies to some degree. There are exceptions to this rule and each valuation can be different but it is incumbent on the analyst to consider why national economic conditions are not a factor if that is the case.

Understandably, a review of national economic conditions can be lengthy and broad. The purpose of an analysis of the national economy in a valuation report is not to present an exhaustive study, but to identify those items having an affect on the value. For example, anticipated changes in inflation and anticipated changes in the Gross Domestic Product (GDP) are two important areas. Changes in GDP can affect demand and changes in inflation can affect pricing as well as interest rates. These items affect almost all industries and can be critical in other industries. For example, interest rates are an important consideration in the residential construction industry because higher interest rates preclude certain potential homeowners from buying homes. The overall conclusion for LEGGO is that the national economy appears to be performing well and is conducive to continued growth in their industry.

In conjunction with the preparation of our opinion of fair market value, we have reviewed and analyzed economic conditions around the December 31, 1999, date of valuation. The following are summary discussions and analyses of the national econ-

[5] See Sources of Information #5.

omy for the fourth quarter of 1999. These discussions are based on a review of economic statistics, articles in the financial press, and economic reviews found in business periodicals contemporaneous to the valuation date. The purpose of the review is to provide a representative "consensus" review of the condition of the national economy and its general outlook at the end of the fourth quarter of 1999.

General Economic Overview

According to preliminary estimates released by the Department of Commerce's Bureau of Economic Analysis (BEA), real Gross Domestic Product (GDP), the output of goods and services produced by labor and property located in the United States, increased at an annualized rate of 5.8 percent during the fourth quarter of 1999. Revised growth in GDP for the third quarter of 1999 was 5.7 percent, which is higher than the preliminary estimated annualized growth rate of 4.8 percent. Increases in personal consumption expenditures, government spending, inventory investment, and exports were major contributors to the increase in GDP. These components were partially offset by an increase in imports. Annual growth in GDP for 1999 was 4.0 percent, modestly lower than the 4.3 percent growth rate reported for 1998. The U.S. economy is expected to continue expanding in the year 2000 at approximately a 3 percent to 4 percent growth rate.

The Composite Index of Leading Economic Indicators, the government's primary forecasting gauge, increased 0.4 percent in December after rising 0.1 percent in October and 0.3 percent in November. The index attempts to gauge economic activity six to nine months in advance. Multiple consecutive moves in the same direction are said to be indicative of the general direction of the economy. In December, nine of the ten leading economic indicators rose. The most significant increases were money supply, interest rate spread, manufacturers' new orders of nondefense capital goods, stock prices, and manufacturers' new orders of consumer goods and materials. During the six-month span through December, the leading index rose 0.9 percent and seven of the ten components advanced. According to The Conference Board's report, "the leading indicators point to a continuation of the [economic] expansion during 2000."

Stock markets ended the year at record levels. Broad market and blue chip stock indices turned in 20 percent to 25 percent annual gains, while the NASDAQ gained an unprecedented 85.6 percent during 1999. The Federal Reserve (the "Fed") increased the federal funds rate in mid-November in an effort to slow economic growth and thus curb inflation. The Fed is attempting to cool the robust economic engine before it produces excessive inflationary pressure. Additional rate tightening is expected during the early part of 2000. Despite a mid-quarter respite in bond price declines, bond yields reached their highest levels of the year in December with the 30-year Treasury bond averaging a yield to maturity of 6.35 percent.

Inflation results for 1999 reflect very low core price growth but high growth in energy prices. The Consumer Price Index (CPI) rose 2.7 percent for the year. Tight labor markets and strong economic activity are feared to be producing inflationary pressures. However, pricing data continues to suggest that gains in productivity and limited pricing power are keeping inflation in check. The inflation rate is expected to continue at approximately 2.5 percent to 3.0 percent in the first half of the year 2000, but increasing fuel prices are posing a significant threat to future price stability.

Construction, Housing, and Real Estate

Home building is generally representative of overall economic activity because new home construction stimulates a broad range of industrial, commercial, and consumer spending and investment. According to the U.S. Commerce Department's Bureau of the Census, new privately owned housing starts were at a seasonally adjusted annualized rate of 1.712 million units in December, 7 percent above the revised November estimate of 1.598 million units, but 2 percent below the December 1998 rate. Single-family housing starts in December were 1.402 million, 8 percent higher than the November level of 1.299 million units. An estimated 1.663 million privately owned housing units were started in 1999, 3 percent above the 1998 figure of 1.617 million.

The seasonally adjusted annual rate of new housing building permits (considered the best indicator of future housing starts) was 1.611 million units in December, similar to the revised November rate of 1.612 million and 6 percent below the December 1998 estimate of 1.708 million.

Summary and Outlook

Economic growth, as measured by growth in GDP, accelerated to 5.8 percent in the fourth quarter of 1999, after registering a revised 5.7 percent annualized rate in the third quarter. Annual growth in GDP for 1999 was 4.0 percent. Stock markets finished the year at record levels. Both the DJIA and S&P 500 experienced double-digit growth for the fifth straight year, while the NASDAQ posted an 85.6 percent gain in 1999. Bond prices have generally declined throughout the year but showed particular weakness on rising yields late in the fourth quarter. Fourth-quarter inflation reflected a seasonally adjusted annualized rate of 2.2 percent, representing a decrease from the third quarter rate of 4.2 percent. The rate of inflation for 1999 was 2.7 percent, higher than the 1.6 percent rate of 1998. After leaving interest rates unchanged at its October 5 meeting, the Federal Reserve's Open Markets Committee raised interest rates by a quarter of a percentage point at its November 16 meeting. No change was made at the December 21 meeting. Economic growth is expected to moderate somewhat from recent levels, but should remain historically favorable with GDP growing at 3 percent to 4 percent. Inflation is expected to remain relatively mild at below 3 percent, but increasing fuel prices are posing a significant threat to future price stability.

National Economic Impact on Valuation

Analyzing the national economy is an important step in performing a valuation because it helps to identify any risk that the economy may have in relation to the Company. In this case, the economy appears to be performing well.

REGIONAL ECONOMIC DATA (AS OF DECEMBER 8, 1999)[6]

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Regional Economic Data

It is not unusual for regional and local economic data to differ from the national economy, even on a long-term basis. However, analysts must ascer-

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[6] See Sources of Information #6.

tain whether anticipated changes in the national economy may filter down to the regional and local economy. In the case of LEGGO, the regional and local economy is more important than the overall national economy (with the exception of interest rates), given the fact that it is a construction company that operates only in a certain geographic area. Some analysts make the mistake of reviewing just national economic data without considering regional and local data. Doing this can lead to different assumptions affecting the ultimate conclusion.

The regional economy remained strong in October and early November but was expanding more slowly than earlier in the year. Reports on consumer spending were mixed, with some noting strong sales growth for the first weekend of the 1999 holiday shopping season.

Construction activity generally was strong. Overall manufacturing output remained strong, but conditions were varied across industry segments. The region's labor markets remained much tighter than the rest of the nation, and seasonal demand put additional strain on some sectors of the market. The fall harvest was complete, as was the planting of winter wheat. A survey of agricultural bankers indicated that slow farm loan repayments continued to be a problem.

Construction and Real Estate

Overall real estate and construction activity was robust, but softer than earlier in the year. Demand for both new and existing homes continued to ease in October and early November, but most reports described the market as strong. Those realtors contacted indicated that sales in October and early November were down about 10 percent from very strong results a year earlier. Homebuilders' reports appeared to be more positive than realtors' reports, with most reports indicating new home sales were unchanged or down slightly. Conditions in the nonresidential sector remained strong and steady for the most part, according to most reports.

Development of light industrial space was steady to down slightly, as was the development of infrastructure projects. A report from one of the largest metro areas suggested that a few large office projects that have recently broken ground might be the last of the current downtown office expansion. Some contractors noted that many customers have changed strategies, preferring to hire the contractor viewed as most likely to complete the job on schedule rather than going with the low bidder.

Regional Economic Impact on Valuation

The regional economy should also be analyzed in performing a valuation to help to determine specific risks associated with the particular region that the Company operates in. In this instance the regional economy is performing very well in many areas.

LOCAL ECONOMY

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Local Economic Data

For the valuation of smaller businesses such as LEGGO, conditions in the local economy are more relevant than regional or national economic data. It is important for the analyst to ascertain whether the activities of the company and the sales/revenue of the company were derived more from a local, regional, or national area perspective. The classic example of this would be a local hardware store. Operations of such a store would be influenced heavily by local activities as opposed to a national chain such as Home Depot, which would be affected more by national factors.

Local conditions that could have a deleterious effect on business operations include plant closings, changes in staffing of military or other government facilities, restrictive zoning ordinances, and dependence on a single industry as a primary employer.

Anycity, Anystate, was founded in 1810. It has an estimated population of 670,000 citizens and is approximately 326 square miles in area. The economy is made up primarily of trade, services, and manufacturing. Anycity has the twelfth strongest economy in the nation, according to a 1998 economic analysis. The analysis studied factors such as employment, per-capita personal income and construction, and retail employment.

According to another 1998 study, Anycity was one of the top 10 metropolitan areas in the nation as a hot spot for starting and growing young companies. The survey measured the number of significant start-up firms created during the last ten years and the number of 10-year-old firms that grew substantially during the last four years. Also, in November of 1997, a national magazine named Anycity one of the top 10 "most improved cities" for business in the United States. Anycity was ranked seventh based on cost of living, educational opportunities, quality of life, and business issues. Construction activity also remained good.

Local Economic Impact on Valuation

The local economy is another important aspect to consider when performing a business valuation. The local economy represents the immediate environment that the Company operates in and thus, is vital to analyze. The economy of Anycity, Anystate, appears to be doing very well. Thus, in our opinion, there is little risk associated with the local economy that will affect the Company.

INDUSTRY OUTLOOK

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Reliance on Industry Data

To the extent possible, the industry outlook should tie to the assumptions used in the valuation, particularly to growth rates, profit margins and risk factors. Industry conditions can have a large effect on value. A poor or inadequate

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industry assessment can discredit a valuation. It is not the only deciding factor in supporting valuation assumptions but it is an important one.

Water and Sewer Systems

Water supply construction increased 5 percent in 1998, while sewerage construction was about the same as the level in 1997. Both of these construction categories did well in the mid-1990s, reflecting high levels of building construction as well as work on long-deferred projects. The strong construction market expected in 2000 will help both categories do well. In the longer-term waterworks probably will be one of the more rapidly growing categories of public construction. The aqueduct systems of most older cities are so old that extensive replacement work must be done each year. The current level of construction in the United States is much lower than that needed to replace waterworks every 50 years, which is the recommended practice. Most water utilities are in a good position to raise the needed capital, and so a steady increase in replacement construction is likely through 2000.

The Safe Drinking Water Act requires numerous upgrades and replacements of water supply facilities. The Water Resources Act has expanded the role of the federal government in municipal water supply and appears to have facilitated increased federal funding for water supply construction. After 1999 sewerage construction probably will continue to increase, although at a growth rate lower than that of the overall economy. Federal spending may not keep up with inflation, but the state and local share will increase steadily. A growing market factor is the need to repair, modernize, and replace the sewage treatment plants that were built during the boom of the 1970s. The sustained recovery in building construction also will support sewerage construction.

Industry Outlook Impact on Valuation

The outlook for this industry is good. The Company is a subcontractor that does mainly waterline and sewer work. The water and sewer portion of the construction sector appears to be growing and is expected to grow in the next few years. The fact that there is a need of repairs and modernization of sewage treatment plants that were built a few decades ago also provides a positive outlook for the Company.

FINANCIAL ANALYSIS OF THE COMPANY

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Presentation of Financial Data

There are two schools of thought in presenting financial information. One is to put all the financial information in tables throughout the report. For example, five years of spread financial statements would be in a table or exhibit that would be within the text. Others believe that such information should be in exhibits in an appendix to the report. The style used in this report puts the detail in the appendix and puts the summary information in the body of the report.

Historical Overview and Analysis

Financial statement amounts labeled "Dec-98" represent the nine-month period April 1, 1998 through December 31, 1998, due to a change of year end.

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Relevance of Historical Financial Data

Some analysts believe that reviews of historical information have limited, if any, relevance. They support this idea by stating that valuation is a forward looking exercise. Other analysts rely completely on historical information for formulating their opinions about the outlook and anticipated performance of a company. An analysis of the company's historical operating performance is an important component of a valuation. It indicates how well the management team is performing overall and can lead to information concerning trends. However, it is also true that history may not repeat itself and/or history may not be indicative of future performance. For example, the company may not have performed well in the past due to such factors as loss of a key person, litigation, or other such items. That company's problems may be behind it, and the effect of those factors on the financial performance of the company may no longer be negative. If the historical information (without adjustment) is then used to capitalize future income or cash flow, the company's value may be understated. In those situations, it may be better to prepare a pro forma analysis of the anticipated performance of the company. However, analysis of the historic performance of the company still would be important since it could indicate problem areas that may have been corrected.

The historic performance of the company also should be viewed in light of the economy and industry performance during the historical period. For example, you may see an historical trend in the company where the company was growing at 6 percent a year. That may lead to a conclusion that the company is enjoying a fairly healthy growth rate. However, one may find that the company's competitors and peers in the industry were growing at 9 percent or higher during that period and that the company being valued is actually a laggard and could have problems competing. Alternatively, one could have a company that for the last 5 years has been decreasing its revenues and profits 5 percent each year indicating that it is a problem company. However, there may be a situation where an industry review indicates that everyone else was decreasing at 10 percent or 15 percent a year and the company you are valuing has less risk and is managing its resources better than its competitors during a difficult time. The analysis of the historic information should be made in light of the local economy, the regional economy, the national economy asnd the industry outlook. Doing this will give some indication as to how well the company has performed and, more important, is expected to perform.

Income Statements

Revenues

Revenues are generally the first component to be reviewed by financial analysts. All other things being equal, trends in revenues will translate into trends in profit margins, as well as the Company's ultimate fate. Increases in revenues should lead to higher profitability as the Company's fixed costs are spread over a wider revenue base leading to lower fixed costs per dollar of revenue. The following table represents the actual revenues of the Company for each year and the growth trend associated with each year.

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-98	Dec-99
Revenues	$12,198,433	$11,345,938	$10,726,214	$11,558,858	$12,278,556	$14,819,373
% Change		-7.0%	-5.5%	7.8%	n/a	20.7%

As can be seen above, the Company's revenues have increased toward the latter part of the period analyzed. The revenues for the nine-month period December 1998 were higher than any of the previous twelve-month periods. Over the period 1995-1999, the compound growth rate in revenues was approximately 4 percent.

Cost of Goods Sold

The Company's cost of goods sold were as follows:

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-98	Dec-99
Cost of Goods Sold	$9,774,937	$9,301,970	$8,193,650	$8,804,580	$8,868,450	$11,676,380
% of Sales	80.1%	82.0%	76.4%	76.2%	72.2%	78.8%

To compare the Company to the industry, we used Benchmark studies (fictitious) 1999/2000. We believe that the appropriate industry classification for the Company is Standard Industrial Classification (SIC) Code 1623: Construction—General—Water, Sewer, Pipeline, Communication & Power Line Construction. According to the Benchmark study, the cost of goods sold averaged 78.2 percent in 1999. As presented above, the Company's cost of goods sold as a percentage of revenue was 78.8 percent in 1999, which is comparable to the industry average.

Operating Expenses

The Company's operating expenses were as follows:

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-98	Dec-99
Operating Expenses	$1,135,984	$818,233	$1,213,537	$1,563,721	$872,841	$1,202,237
% of Sales	9.3%	7.2%	11.3%	13.5%	7.1%	8.1%

According to the Benchmark studies, operating expenses as a percentage of sales for companies in this industry was approximately 14.2 percent in 1999. As

presented in the table above, the Company's ratio was approximately 8.1 percent in 1999, significantly lower than the industry average.

Balance Sheets

Current Assets

Current assets usually consist of cash and cash equivalents, accounts receivable, inventory, and other current assets, such as prepaid expenses.

Asset Mix

Over the period, the majority of the Company's assets has been in fixed assets and contract receivables. The following table illustrates the Company's asset mix as a percentage of total assets.

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-98	Dec-99	Benchmark
Cash and Equivalents	13.8%	9.0%	10.2%	10.5%	1.7%	4.6%	11.2%
Contract Receivables	19.6%	15.8%	12.6%	10.1%	39.3%	34.3%	39.9%
Inventories	0.2%	0.2%	0.3%	0.2%	0.1%	0.6%	1.0%
Other Current Assets	5.8%	8.9%	14.2%	22.3%	9.7%	5.9%	7.7%
Net Fixed Assets	54.4%	58.8%	59.6%	55.3%	47.9%	53.3%	33.5%
Other assets	6.2%	7.1%	3.3%	1.6%	1.3%	1.3%	6.7%

As presented in the table above, the Company's asset mix was stable for the most part. The contract receivables increased significantly in 1998 and 1999 due to the change in the reporting periods. The contract receivables tend to be higher at the December 31 year-end than they were at the March 31 year-end. The Company also has a much higher percentage of net fixed assets than the industry. The Company maintained a lower cash balance than the industry in the past few years, but that again is mainly due to the change in year-ends.

Liabilities

The highest percentage of liabilities consisted of long-term debt and the current portion of long-term debt. The following table illustrates the Company's liabilities mix as a percentage of total liabilities and stockholder's equity:

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-98	Dec-99	Benchmark
Short-term Notes	2.2%	2.5%	2.4%	2.9%	8.7%	2.9%	3.4%
Current Portion of LTD	0.0%	0.0%	0.0%	0.0%	3.9%	6.8%	4.8%
Accounts Payable	3.2%	7.4%	3.1%	4.3%	6.3%	7.7%	15.2%
Other Current Liabilities	12.9%	6.2%	4.1%	15.9%	4.3%	5.9%	12.8%
Long Term Debt	10.4%	12.6%	14.5%	13.4%	6.7%	4.1%	12.9%
Equity	71.3%	71.3%	75.9%	63.5%	70.0%	72.6%	50.9%

The largest liabilities were the accounts payable and the long-term debt. The equity as a percent is much higher than the industry average.

Equity

Stockholder's equity refers to the difference between the book value of a company's assets and its liabilities. The stockholder's equity increased each year over the period analyzed. During the entire period 1995 to 1999, the stockholder's equity grew 109.8 percent.

Financial Ratio Analysis

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Relevance of Benchmark Financial Ratios

Analysts often value companies, particularly smaller ones, by comparing their historic financial performance with benchmark data available in the marketplace. These benchmarks are typically segregated by SIC code and present aggregated information based on the ratios of the companies. Benchmark ratios include profit margins, returns on equity and assets, assets turnover ratios, liquidity ratios, and leverage ratios.

Some analysts believe that these types of comparisons are meaningless because none of the information can be directly tied to a valuation discount or capitalization rate. However, other analysts believe that this information can give a reasonable indication as to how well the company is performing against its peers that are within the benchmark industry group. They use it to assess risk. For example, in the valuation of LEGGO, the analyst made an extensive comparison of LEGGO's various ratios to the ratios in a national benchmark database. Although this gives us an indication that LEGGO is performing better or worse in various areas, there are no direct links to any valuation pricing data.

When several guideline public companies are used in the guideline public company method (GPCM) of the market approach, their ratios can be tied to such pricing ratios as price to earnings, invested capital to EBITDA, and so on. The analyst can take a look at how the subject company compares to the various ratios of the public companies and then make adjustments to the public company multiples to reflect those differences. This cannot be done when using published benchmark data, which have no direct reference or tie to valuation multiples.

The information used in some of the benchmarks has not been verified and checked and/or is not time sensitive. Furthermore, much of the data may be in a format where items may be classified differently depending on how the particular company prepares its books.

A common mistake made by analysts is to use several different benchmark sources for ratios and then compare them to the ratios of the subject company without understanding how those ratios were calculated. For example, some ratios are calculated based on end-of-year balance sheet amounts whereas others are calculated based on an average of beginning and end-of-year balance sheet amounts. It is important that the subject company ratios are calculated in the same way as the benchmark ratios. Otherwise, inaccurate comparisons will result. In general, the use of benchmark data can be useful for risk assessments with the caution to not put over-reliance on the benchmark data since they are not directly tied to any specific valuation multiples or cap rates.

Ratios for the nine-month period ending December 31, 1998 are not presented.

The industry statistics used in the ratio analysis were taken from Benchmark Studies (fictitious). The median statistics used are for businesses whose primary Standard Industrial Classification code is 1623: Construction—General—Water, Sewer, Pipeline, Communication & Power Line Construction.

Ratios are divided into four groups, each representing an important aspect of the Company's financial position. The groups are liquidity, activity, leverage, and profitability.

Liquidity Ratios

Liquidity analysis assesses the risk level and ability of a company to meet its current obligations. It represents the availability of cash and the company's ability to eventually convert other assets into cash.

Current Ratio. The current ratio compares current assets to current liabilities. It measures the margin of safety a company has for paying short-term debts in the event of a reduction in current assets. It also gives an idea of a company's ability to meet day-to-day payment obligations. A higher ratio is better.

	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99
Company	2.3	2.1	3.9	1.9	2.0
Industry	1.4	1.2	1.2	1.5	1.5

The Company's current ratio was constantly above the industry average over the period. The Company's ratio is higher than the industry due to lower current liabilities.

Quick Ratio. The Quick Ratio adds accounts receivable to cash and short-term investments and compares the sum to current liabilities. The resulting ratio measures a company's ability to cover its current liabilities without having to convert inventory to cash. Generally a higher ratio is better.

	Mar-95	Mar-96	Mar-97	Mar-98	Mar-99
Company	1.9	1.5	2.4	0.9	1.7
Industry	1.1	1.0	1.0	1.2	1.2

The Company's ratios fluctuated over the period. The basic difference between the current and quick ratio is that the quick ratio includes only cash and receivables as the numerator. Thus, inventory is not included. As can be seen from the table, the industry averages contained a larger inventory base as indicated by the lower ratio. In 1998, the Company's ratio was lower than the industry average due to a large increase in current liabilities in that year. Other than that year, the Company has been very liquid and could easily cover its current maturities.

Conclusion of Liquidity Ratios. The Company appears to have lower risk than that of the industry. The current ratio and the quick ratio are above the industry average for the most part. Thus, the Company would have little difficulty covering its obligations when compared to other companies within the industry.

Activity Ratios

Activity ratios, also known as efficiency ratios, describe the relationship between the Company's level of operations and the assets needed to sustain the activity. Generally, the higher the ratio, the more efficient the Company's operations, as relatively fewer assets are required to maintain a given level of operations. Although these ratios do not measure profitability or liquidity directly, ultimately they are important factors affecting those performance indicators.

Collection Period Ratio. The collection period ratio, also known as the days' sales in receivables, multiplies accounts receivable at year-end by 365, then divides the result by net sales for the year. This ratio measures how much control a company has over its accounts receivable. This ratio also indicates how many days, on average, it takes the company to convert accounts receivable to cash. Generally, the smaller the number of days, the better.

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-99
Company	19	19	16	16	58
Industry	55	54	59	63	60

Compared to the industry, the Company was better at collecting receivables. For four of the five years represented in the above table, the Company converted its accounts receivable to cash more quickly than the other companies within the industry. The Company's collection period ratio was higher than the industry in 1999 due to two contracts that paid very late.

Fixed Assets Activity Ratio. The fixed assets activity ratio compares net sales to fixed assets. It indicates a company's ability to generate net sales from the use of its fixed assets. Largely depreciated fixed assets, leased assets or a labor-intensive operation may cause a distortion of this ratio. Generally, a higher ratio is better.

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-99
Company	6.9	5.2	4.7	4.1	4.1
Industry	5.8	6.2	6.1	6.9	6.4

The Company appears worse than the industry average during most of the period. The Company appears to have not utilized its fixed assets in generating revenues as effectively as the industry. However, the Company owns all of its equipment and machinery rather than renting. Thus, the higher amount of fixed assets causes the ratio to be low as opposed to the industry figures. Most companies of this nature do not own all of their equipment. The industry averages most likely represent companies that both rent and own their respective equipment and machinery.

Asset Management Ratio. The asset management ratio compares net sales to total assets. It measures a company's ability to generate sales volume using all of its assets. It is useful in comparing companies within specific industry groups on their effective employment of assets. Generally, a higher ratio is better.

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-99
Company	3.7	3.0	2.8	2.3	2.2
Industry	2.1	2.0	1.9	2.4	2.2

The Company's ratio decreased each year, and its trend was equal to or slightly less than the industry in the most recent two years. The Company is not generating sales volume using its assets as effectively as in the past but is comparable to other companies in the industry. Again, this may be the effect of the large level of owned fixed assets.

Conclusion of Activity Ratios. The Company seems to be doing better and worse than the industry in this category. The Company does collect its receivables more quickly than other companies within the industry for the most part. However, the Company is not as effective as other companies within the industry with fixed assets but this may be the effect of the large level of owned fixed assets.

Leverage Ratios

Leverage ratios measure the relative exposure of the creditors versus the shareholders of a business. Leveraged companies accrue excess returns to their shareholders as long as the rate of return on the investments financed by debt is greater than the cost of debt. However, financial leverage brings additional risks primarily in the form of fixed costs that would adversely affect profitability if revenues decline. Additionally, the priority of interest and debt can have a severe negative effect on a company when adversity strikes. The inability to meet these obligations may lead to default and possibly bankruptcy.

Net Fixed Assets to Equity. The net fixed assets to equity ratio divides net fixed assets by a company's equity. It measures a company's ability to support the acquisition of fixed assets by using the original investment plus retained earnings. Generally, a low ratio is better.

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-99
Company	0.8	0.8	0.8	0.9	0.7
Industry	0.7	0.8	0.7	0.8	0.6

Overall, the Company is close to the industry averages. The Company's ratios were also pretty stable over the period. The Company would have no problem supporting the acquisition of fixed assets with retained earnings.

Total Debt to Equity Ratio. The debt to equity ratio compares a company's total liabilities to its net worth. It expresses the degree of protection provided by the owners for the creditors. Generally, a lower ratio is better from a risk perspective but could also indicate less than optimal use of debt.

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-99
Company	0.4	0.4	0.3	0.6	0.4
Industry	1.3	1.2	1.0	1.1	1.0

The Company's ratio has been better than the industry averages for every year. A lower ratio indicates less debt in relation to equity. As presented above, the Company had less debt than the industry.

Conclusion of Leverage Ratios. The Company is leveraged and contains some debt and related interest expense, but its debt is still not as high as the industry averages. The Company should have little trouble supporting the purchase of fixed assets with retained earnings or additional debt.

Profitability Ratios

Profitability ratios measure the ability of a company to generate returns for its stockholders.

Return on Equity. The return on equity ratio compares the pretax income to equity. It measures a company's ability to generate a profit on the owner's investment. Generally, a higher ratio is better.

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-99
Company	54.9%	47.3%	46.8%	41.4%	40.3%
Industry	30.5 %	32.7%	31.9%	28.8%	31.2%

Although the Company's return on equity ratio has deteriorated during the analysis period, it is still higher than the industry averages each year.

Return on Assets Ratio. The return on asset ratio is calculated by dividing pretax income by total assets. This ratio expresses the pretax return on total assets and measures the effectiveness of management in employing the resources available to it. Generally, a higher ratio is better.

	Mar-95	Mar-96	Mar-97	Mar-98	Dec-99
Company	39.7%	33.7%	35.5%	26.3%	29.3%
Industry	21.2%	26.2%	19.8%	23.2%	19.9%

The Company's ratios were better than the industry each year.

Conclusion of Profitability Ratios. The Company is profitable and appears to be outperforming the industry although there is a recent decrease in the margins.

APPRAISAL OF FAIR MARKET VALUE

Valuation Approaches

Conventional appraisal theory provides three approaches for valuing closely held businesses: asset, income and market. Asset approach methods look to an enterprise's underlying assets in terms of their net going concern or liquidation value. Income approach methods look at an enterprise's ongoing cash flows or earnings and apply appropriate capitalization or discounting techniques. Finally, market approach methods derive value multiples from guideline company data or transactions.

Asset Approach

Adjusted Book Value Method

This method consists of determining the fair market value of a company's assets and subtracting the fair market value of its liabilities to arrive at the fair market value of the equity. Both tangible and intangible assets are supposed to be valued. Appraisals are used to value certain assets and the remaining assets and liabilities are included at book value, which is often assumed to approximate fair market value. This method does not provide a strong measure of value for goodwill or other intangible assets, which are more reasonably supported through the company's income stream. In this case, the value under the adjusted book value method (net tangible assets) was less than the values calculated under the income and market approaches. Thus, this method was not utilized in the determination of a conclusion of value for the Company.

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Is the Asset Approach Always Necessary?

Some analysts argue that all three approaches, including the asset approach should be used if appropriate data is available. They will often value just the tangible net assets of the business. However, other analysts argue that individual intangible assets also must be valued to implement this approach properly. Intangible assets in LEGGO include assembled workforce, trade name, customer relationships, backlog, contracts, goodwill, and going concern.

Most analysts do not use the full cost approach because increases in the accuracy of the appraisal, if any, are not worth the time and expense of having all of the assets valued. Furthermore, the aggregate value of all intangible assets is included in the values derived from the income and market approaches.

Excess Cash Flow Method

This method, which is sometimes referred to as the excess earnings or the formula method, is based on the "excess" cash flow or earnings available after a percentage return on the value of the net tangible assets used in a business has been subtracted. This residual amount of cash flow is capitalized at a percentage return for intangible assets of the business to derive the intangible asset value. Sometimes this method is used for very small businesses and in marital dissolution proceedings. The Internal

Revenues Service's position on this method is that it should only be used when no better method exists.[7] It was not used in the valuation of LEGGO since better methods were available.

VV

Use of the Excess Cash Flow Method

Some analysts use this method when valuing a company or professional practice in a divorce setting. They use this method because the court in that jurisdiction is familiar with it and it would be perceived as an omission if excluded. Yet the IRS clearly states that it should be used only when no better method is available. Since the income approach, and often the market approach, can be used in valuations of most operating entities, other better methods often are available.

Income Approach

Capitalized Cash Flows Method (Predebt Invested Capital Basis)

This method determines the value of a company as the present value of all of the future cash flows that the business can generate to infinity. An appropriate cash flow is determined and then divided by a risk-adjusted capitalization rate, here the weighted average cost of capital. In this instance, control cash flows were used. The following paragraphs describe the steps that were taken to determine the Company's indicated value from this method. The value is stated on a marketable, control interest basis.

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Why, When, and Where Should Invested Capital (Predebt or Debt-Free) Methods Be Used?

There is much debate in the valuation community about whether to use direct equity methods of valuation, in which interest expense and debt principal are included as uses of cash, or to use invested capital methods, where interest expense and debt are excluded as uses of cash. Theoretically, the use of both models should give a similar result. Both methods can be used in most valuations. However, in certain circumstances, one method may be better than the other. For example, the invested capital method may be used more in control valuations where the capital structure of the company is anticipated to change. Alternatively, in minority valuations, some analysts believe that the direct equity method is more appropriate since the minority shareholder cannot change the capital structure of the company.

[7] Revenue Ruling 68-609.

There is also controversy surrounding whether, in a control valuation , the analyst should use an optimal capital structure that an outside buyer may employ or whether to use the existing capital structure of the company. The choice also can be affected by the ability of the current owners to obtain financing versus the hypothetical buyer's ability to get different financing. Under a fair market value standard of value, many analysts will use the existing capital structure of the company on a control basis. This would be control stand-alone value, which is the value to the current owners. Any additional value attributable to new buyers may be more akin to investment value and/or synergistic value. Other analysts will use an optimal capital structure if they believe the "Typical" hypothetical buyer would employ that structure.

When using the invested capital method, the capital structure must be selected—what percent of total invested capital is debt versus equity? However, when using direct equity methods you cannot get away from a capital structure assumption, a misconception that some analysts have. Every return on equity should reflect the amount of debt used by the company. The potential increased rate of return requirements for equity holders must be reflected when increasing the debt levels of a company. Analysts can do this mathematically under the capital asset pricing model (CAPM) by unlevering and relevering the beta based on different capital structures. It is more difficult to adjust for debt when using a build-up method which may be more subjective. The capital structure of the company is explicitly recognized in the invested capital method through the weighted average cost of capital model whereas it is more implicit in the direct equity method where the rate of return is derived through either build-up model or the CAPM.

One potential problem with using the direct equity method is that the definition of cash flow includes new principal in as well as principal paid back out. If the new principal in the current year's cash flow that is being capitalized is higher than the principal being paid out, there is a disconnect in the amount of cash flows, creating an overvaluation. For example, in using the capitalized cash flow method, where the company added one million dollars of debt last year but did not pay any existing debt down, the implication when we capitalize the cash flow into perpetuity would be that a bank would give the company one million dollars per year every year without having to pay any money back. This is obviously a false assumption. In a direct equity method, when deriving cash flow, there needs to be an assumption of a normalized level of cash flow that would be capitalized into perpetuity. This includes a normalized level of debt, meaning that a debt assumption is actually made in the direct equity method.

Some analysts tend to take a practical approach and say that the use of invested capital methods is more complicated, more difficult to explain, and, as such, more difficult to support. Although the invested capital method may entail more steps than direct equity and it may appear upon first view to be more complicated, this is not a good reason to dismiss this method since it may be more appropriate to use it in various circumstances.

Determination of Appropriate Control Cash Flow. Under the capitalization of cash flows method, we used a predebt/invested capital basis for our calculation. This is due, in part, to the fact that the interest being valued is on a control interest basis. This control interest can influence the amount of debt held by the Company. We began our analysis with the adjusted pretax earnings at the date of valuation and for the five years prior to the date of valuation. The adjustments that were made to arrive at adjusted pretax earnings include an adjustment to officers' compensation, a control adjustment. We then made adjustments for interest expense, nonrecurring items, and for items that are not reflective of operations to the pretax earnings.

VV

Control versus Minority Cash Flows

The cash flows of a company determine whether the company is being valued on a minority or a control basis under the income approach. Many analysts also believe this for the market approach. If the owner of a company is taking out excess compensation, like Tom Profit in LEGGO, and the resulting lower income is capitalized without adjustment, that would produce a minority value indication. Adding back the owners' excess compensation and then capitalizing the higher income would indicate a control value. This is just one example of a control-type adjustment. Most analysts agree with this concept.

What if one values a company that doesn't have any control adjustments? What if the company is run for the benefit of all shareholders without any shareholder taking out any cash flow over and above what he or she is entitled to? If we have no adjustments to make, is the value control or minority? The answer is yes and yes! The value would clearly be control stand-alone since the capitalized cash flow is the cash flows of the entire company. Since the current owners of the company are operating it to the benefit of all shareholders, it becomes the minority value as well. However, it is only the minority value to the extent that the current owners continue their policy. Policies can change and/or new owners can come in. This is an additional risk factor for minority owners that could indicate that a discount for a lack of control may be appropriate. Just because the owners are operating in a certain favorable way currently, does not mean that will not change in the future. When capitalizing income we are capitalizing that income into perpetuity. The assumption is that the current owners would continue the current favorable policies forever. Consequently, an adjustment for lack of control may be appropriate to reflect the risk of potential future changes in cash flows to the minority owner from a change in management or the policies or both.

After compensation, the next adjustment was to add back the depreciation expense. This noncash expense should be added back to arrive at an appropriate level of cash flow. The adjustment for the gains and losses on the sale of marketable securities was made because the marketable securities are considered to be an excess/nonoperating asset. All income and expenses related to excess/nonoperating assets are taken out of the income stream because the total value of the asset is added to the indicated value of operations. The reason for the adjustments to dividend income and unrealized gains on marketable securities is the same. These assets

relate to excess/nonoperating assets and must be taken out of the income stream. The other adjustment that was made was an adjustment to the interest income.

VV

Treatment of Nonoperating/Excess Assets

In valuing a controlling interest of a corporation, most analysts agree that the income and expenses of nonoperating and/or excess assets of the business must be removed from the operating earnings and the asset values added to the value of the operations. There should also be adjustments made to the P&L for related expense and income items associated with the nonoperating assets.

The difference of opinion occurs when valuing a minority interest. Some analysts believe that the same methodology should be employed as in valuing a controlling interest—that is, value the nonoperating or excess assets separately and make the related adjustments to earnings. They would then take a discount for lack of control and a discount for lack of marketability from the nonoperating asset values before or after they added it to the company's discounted operating value. Other analysts believe that a minority stockholder has no access to these types of assets. Therefore, the P&L should remain as is, reflecting the way the company operates. The assets are not separately valued and added back. This obviously creates a situation where the value of the nonoperating/excess assets may be $0.

Depending on the nature of the assets, either approach may be applicable. For example, if the nonoperating/excess assets are cash and that cash is for a bonus to the controlling shareholder within three months, then the minority shareholder can do nothing about it and the value of that asset to the minority interest is $0. However, in the situation where nonoperating assets are more long term in nature, such as excess land or buildings, then the former approach of removing the asset and discounting it, then adding that back to the discounting operating value, may be more appropriate.

In applying the first method, how do you discount the nonoperating assets? Typically nonoperating assets consist of real estate, marketable securities and/or cash. Depending on the materiality of the nonoperating assets, an approach not dissimilar to valuations of family limited partnerships may be appropriate. In some situations there may be different discounts for lack of control and marketability for the nonoperating assets than there are for the operating value of the company.

The resulting amount, adjusted income before income tax, for each year was then averaged. We believe a straight average is appropriate due to the cyclical nature of the Company. However, the Company changed year-ends in 1998. Since we have nine months of data at December 31, 1998, this period was adjusted appropriately.

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Capitalizing Historical Income/Cash Flow

There are many different methods for taking historic income statements and projecting an anticipated future economic benefit to be capitalized. Those

(continues)

methods include: prior year, straight historical average, weighted historical average, trend line analysis, budgeted and others. Generally, analysts will use a straight historical average when the earnings and cash flows are more volatile. The other methods are often more appropriate where there is more of a linear trend in the historical results.

The next step was to deduct an estimated ongoing depreciation expense in order to calculate state and federal taxes. In this instance, the ongoing depreciation expense was estimated to be $650,000 based on estimated future capital expenditures. After the ongoing depreciation was deducted, state and federal taxes were calculated at a combined rate of 40 percent and deducted. The amount that resulted was adjusted income predebt and after tax.

VV

Normalizing Depreciation and Capital Expenditures

A common mistake made in business valuation is to capitalize a cash flow figure into perpetuity where the depreciation greatly exceeds the future capital expenditure requirements. This is obviously an impossible situation since future capital expenditures have to be made to generate future depreciation. Many analysts will normalize depreciation and capital expenditures by making them equal or similar. This equalization process is a simplifying assumption, since capital expenditures will slightly exceed depreciation due to inflationary pressure in a stable business. However, this simplification usually, but not always, has a nominal effect on the value.

There are situations in which depreciation can exceed capital expenditures for extended periods of time. These situations occur when there is a previous purchase of a large long-life asset such as a building, or where goodwill and other intangible assets are amortized over a longer period of time. In those situations, it may be appropriate to have depreciation exceed capital expenditures.

In the normalization process, the depreciation should be adjusted to the level of anticipated capital expenditures; capital expenditures should not be adjusted to depreciation. The future depreciation will be generated by future capital expenditures. Again, the concept is to normalze the cash flows of the business. The normalization process for depreciation should happen in two steps. It needs to be removed from the expenses in the income statement, with the new capital expenditure inserted. To calculate cash flow, depreciation is added back and capital expenditures are subtracted out, which can net to zero.

VV

Methods for Calculating Taxes

The normalized taxes expense also was deducted in this valuation. We have already discussed the different views concerning tax affecting S corporations and other pass-through entities. Assuming taxes are to be deducted there are choices to be made in the method of the tax adjustments. Some analysts will go back and compute taxes in each of the years that are used in the average income

as opposed to making all the adjustments on a pretax basis, calculating the average, and then adjusting for the taxes. When the tax rates are the same, this will not have an effect. However, in C corporations, where taxes expenses may differ for each year due to certain types of planning, an average of five years after-tax income may be different than the average of five year pre-tax income which is then aggregated with one tax amount applied to it. There may also be years when the taxes would be less than the marginal rate. Some analysts believe that an average of the effective rate is more appropriate. Other analysts believe that eventually the company will end up paying close to the marginal rate into perpetuity, and that would be the more appropriate rate.

Three further adjustments were then made to the predebt and after tax income. The ongoing depreciation that was deducted to calculate taxes was added back because it is not a cash expense. The estimated future capital expenditures were then deducted. In this case, it was estimated that future capital expenditures would approximate $650,000 per year based on historical trends. The final adjustment was a working capital adjustment. This adjustment is based on industry data based on an industry working capital to revenue ratio. After making these final three adjustments, predebt and after tax cash flow was $1,000,964. We believe that this is the cash flow that is representative of future operations. The cash flow was then divided by a risk adjusted cap rate using the weighted average cost of capital to derive a value of the operations.

VV

Cash Flow versus Income

There is continuing debate in the valuation industry concerning the use of either cash flow or income when performing discounted cash flow methods or capitalized cash flow methods. Cash is indeed king, and cash flow should be used in most situations. When depreciation and capital expenditures are equalized, the only other real adjustment would be incremental working capital. Not all businesses require incremental working capital, particularly cash businesses or businesses in which receivables are turned quickly. Particularly in small businesses, cash flow and income may be equal or similar. However, many businesses require working capital to fund growth. In those situations, working capital should be considered as a use of cash. Cash flow in a growing business typically would be less than income in those businesses that have working capital needs. Debt also would have to be normalized in terms of debt principal in and debt principal out.

Determination of Weighted Average Cost of Capital.

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Direct Equity Method versus Invested Capital Method

LEGGO was valued using a capitalized cash flow method relying on adjusted and normalized historical income, where each year was equally weighted. In the application of the income approach, it is also possible to use a discounted

(continues)

cash flow method. However, it was unnecessary in this valuation as the projected average growth rate applied to average cash flow was sufficient to estimate future earnings.

Under each one of the two main methods of the income approach, analysts can use either the direct equity method or the invested capital method. The direct equity method includes cash flows direct to equity, which are discounted to present value or capitalized using a capitalization rate based on the company's cost of equity. In an invested capital model, the cash flows would be preinterest and predebt and would be those cash flows available to both debt and equity holders. In an invested capital model, the rate of return would be a weighted average cost of capital that would include the cost of debt and equity. There is some diversity of opinion concerning when to use the invested capital method and when to use the direct equity method.

Often, one of the reasons given for using direct equity is that the analyst can avoid making assumptions of capital structure, e.g., what percent debt and what percent equity will a company use. However, in a direct equity method, there needs to be assumptions of the debt principal paid out and the new debt principal received on a normalized basis. Anytime an analyst normalizes the amount of debt that is used in a company they are explicitly assuming a capital structure. Therefore, debt is a consideration in using the direct equity method.

In this valuation, the analyst used an invested capital method using the company's weighted average cost of capital. Again, it is often used in control valuations. However, each method can be used in minority and control valuations if applied properly. It is often a matter of preference.

There are a number of steps involved in calculating the weighted average cost of capital (WACC). These steps involve calculating the cost of equity, the cost of debt and the determining of an optimal capital structure for the Company, using industry benchmarks. The WACC formula is as follow:

$$WACC = We\ (Ke) + Wd\ (K_{dpt})\ (1 - t)$$

Cost of Equity

We used a build-up method to calculate the cost equity. The formula is:

$$Ke = Rf + RPm + RPs + RPu$$

VV

CAPM versus Build-Up Model
Income Rates or Cash Flow Rates
Minority Rates or Control Rates

There is controversy in the valuation industry about whether the CAPM should be used to value small businesses. Some analysts even believe that CAPM should not be used to value larger businesses. The only difference between the CAPM and the build-up method is the use of beta. It is often dif-

ficult to find betas for small publicly traded companies that could be applicable to small private companies. There are many different sources of beta and many different ways to calculate beta. Betas can differ even for the same public company at the same point in time. Sometimes analysts reject the guideline public company method of the market approach because they believe there are no similar companies. However, they may use those same rejected guideline public companies to derive betas. We believe that this is an inconsistency.

Betas are sometimes available that could be used in the CAPM when valuing small companies. In some industries, there are large numbers of publicly traded small companies where betas may be available. If there are no reasonably similar companies whose betas could be used as a proxy for the small closely held company, then the build-up model may be the best method to use. However, if the betas are reasonable and can be used, then a capital asset pricing model may be considered as well. Also, there are situations where there may be indications of industry risk based on somewhat similar publicly traded companies or industry data. These may be used to increase the specific risk premium that is used in a build-up model. Each of these situations is dependent on the facts and circumstances and can differ depending on the type of company, the industry in which the company operates, and the size of the company.

Another controversy is whether the rates of return determined by the build-up model and CAPM should be applied to income or cash flow. The current consensus is that these are cash flow rates of return. They are also rates of return after corporate tax but before personal investor tax. The rates of return are based on dividends and capital appreciation. Dividends are paid after corporate tax by public companies and capital appreciation is also after corporate tax due to retained earnings used to grow the business. However, these rates of return are before taxes to the individual investor. Ibbotson Associates agrees that traditional rates of return derived using their data should be applied to after tax cash flows.

There is also some discussion concerning whether the rates of returns derived using Ibbotson data are minority rates of return or control rates of return. Ibbotson is very clear in stating that they believe that they are not minority returns. The returns are neutral. Most analysts today believe that any control or minority features are in the company's cash flows instead of the discount rate itself. The Ibbotson data are based on returns of shares of stock that are on a minority basis. However, Ibbotson believes that a controlling shareholder would not necessarily be able to maximize or increase the return. Furthermore, the management and board of directors of publicly traded companies must maximize returns for all shareholders. Regardless of how the company is held, supporting the concept of a neutral return.

The first step was to begin with the risk-free rate of return (Rf) based on long-term (20-year) U.S. Treasury coupon bonds with a yield of 6.83 percent, as reported in the *Federal Reserve Bulletin* at the date of valuation.

VV

Proper Risk-Free Rate

Most analysts use a 20-year risk-free rate of return from a U.S. Treasury Bond because that is the basis from which Ibbotson derives its risk premium data. There is no such thing as an original issue 20-year bond. What analysts and Ibbotson use are 30-year Treasury Bonds that have 20-years remaining to maturity. Recently, the federal government has decided to stop issuing 30-year bonds. Consequently, analysts may have to use a different maturity. However, it is important to note that the yield spread between 10-year bonds and 20-year bonds is typically not that great.

The next steps are to add the common stock equity risk premium (RPm) of 8.0 percent and the small stock risk premium (RPs) of 4.35 percent (tenth decile), both calculated in Ibbotson Associates, *SBBI 1999 Yearbook*.

VV

Equity Risk Premium Choices

Most analysts agree that the proper equity risk premium to apply to the valuation of closely held businesses should be a long-term equity risk premium rather than short-term. Ibbotson reported in its SBBI yearbook that the equity risk premium since 1926 was 8.0 percent through 1999 and 7.8 percent through 2001 (most recent yearbook).

In the selection of the small stock risk premium, there are more differences of opinion. Some analysts use the tenth decile while others will use the microcap strata (the ninth and tenth deciles). As mentioned in Chapter 5, there are also differences of opinion as to which small stock risk premiums to use based on the type of beta when using CAPM. It could be monthly betas, annual betas or sum betas. In the valuation of LEGGO the small stock risk premium selected was 4.35 percent which was taken from Ibbotson's *1999 SBBI Yearbook*, *Valuation Edition*. It was derived from the size premium return in excess of CAPM for the tenth decile. Had this been a valuation being prepared using the *SBBI 2001 Yearbook*, the same size premium would have been 4.63 percent for the tenth decile.

For the small stock risk premium, some analysts use the microcap risk premium because the average includes more companies. In 1999, the microcap risk premium was 2.6 percent, the same as in the *2001 Yearbook*. In the *2001 Yearbook,* Ibbotson has segmented their information into deciles 10a and 10b. The 10b decile risk premium would have been 8.42 percent. When valuing small companies there is continuing controversy about whether to use the tenth decile, microcap or 10b strata as the measure of the small stock risk premium.

The final step is to add a company specific premium (RPu) that takes into account additional risks that are specific to the Company. These additional risks include the following:

- *Company's depth of management*. The Company appears to have sufficient depth of management.
- *Importance of key personnel to the Company*. The Company does have several key employees whose loss would have a negative effect on the Company.
- *Growth potential in the Company's market*. The water and sewer portion of the construction sector appears to be growing and is expected to grow in the next few years (See earlier discussion on the industry outlook).
- *Stability of the Company's earnings and gross profits*. The Company has a consistent history of generating profits.
- *Company's bidding success rates*. The Company has had good bidding success. In addition, the Company has maintained good profit margins. This indicates that the Company's bidding success is not due to underpricing contracts.
- *Financial structure of the Company*. The Company is financially sound.
- *Geographic location of the Company*. The Company is located in Anycity, Anystate (See earlier discussion on the local economy).
- *Company's order backlogs*. The Company has a sufficient amount of contract backlogs.
- *The diversification of the Company's customer base*. The majority of the Company's revenues is generated from only a few customers. The Company could be negatively effected should any of these customers be lost.

After considering the financial ratio analysis and the above risk factors, plus the size of the company as compared to the Ibbotson companies, it is our opinion that a company specific premium of 4 percent is appropriate for the Company.

VV

Specific Risk Premium Presentations

As illustrated in Chapter 5, there are many different methods for determining the specific risk premium. All of them require subjectivity. For LEGGO, the analysts decided to list those items they thought were the most important in indicating how the company was performing. They then made a subjective selection of an aggregate 4 percent risk premium. This is a common method of selecting specific risk premiums.

Some analysts argue that there should be some type of numerical system placed on the categories, for example, -3, -2, -1, 0, 1, 2, 3,. Doing this implies precision that does not exist. It can also be difficult to defend in a litigation setting. Think of the following type of possible cross-examination.

Question: Mr. Dude, I notice that you concluded to a 4 percent specific risk premium based on the 9 categories. I notice that you used a system of negative 3 all the way up to positive 3 for each one of the categories. I would like to ask you a question. Is it possible that, in each one of those categories, the specific amount could have differed by, let's say, a half a percent? For example in the category 2, I noticed that you used a 2 percent risk premium. Is it possible that could be 1.5 percent?

Dude: Probably, yes, since no one is that precise.

Next question: Mr. Dude, assume for me if you will, that each one of the categories was a half point less. Please indicate how that would change the specific risk.

(continues)

Answer: It would reduce the specific risk by 4.5 percent, and would result in a negative 0.5 percent risk premium.

As you can see, this could be a difficult presentation to defend. Let us go back to the presentation that the analyst made in LEGGO. If the question is asked: Mr. Dude, could the 4 percent risk premium have been 4.5 or 3.5? The answer could still be the same, yes. However, the effect would be much less.

The total of these four factors provides a net cost of equity of 23 percent (rounded) as follows:

$$23\% = 6.83\% + 8.0\% + 4.35\% + 4.0\%$$

Cost of Debt

Next, we determined the cost of debt. To calculate this rate, we began by determining the Company's actual borrowing rate at the date of valuation. We believe the borrowing rate of the Company at the date of valuation should be prime plus 1. The prime rate at December 31, 1999 was 8.5 percent. So, the Company's borrowing rate was 9.5 percent. A 40 percent tax rate is deducted. The result is the cost of debt, net of the estimated tax benefit, of approximately 6 percent (rounded).

Weighted Average Cost of Capital

Finally, we determined the Weighted Average Cost of Capital using the debt and equity rates that were already calculated. The equity discount rate is multiplied by an equity percentage and the debt discount rate is multiplied by a debt percentage as determined based on the average capital structure for a company in this industry. In this instance, a 75 percent equity weight and a 25 percent debt weight were determined from industry averages. The percentages were then multiplied by the equity and debt discount rates calculated earlier and then summed to arrive at the weighted average cost of capital discount rate. This rate was calculated to be 18.75 percent as follows:

$$18.75\% = .75\ (23\%) + .25\ (6\%)$$

VV

Weights in the WACC

There is some controversy concerning the selection of the weights to be used for debt and equity in the weighted average cost to capital. Most analysts agree that the existing capital structure of the company should be used without adjustment when valuing a minority interest. The calculation can be done iteratively meaning that you choose a capital structure to value the company, then determine the percent of debt based on that value using the actual debt of the company. If it is different, then you redo the capital structure until it resolves to the proper capital structure that is in existence. This is easily accomplished with the use of spreadsheets. As you change the capital structure of the company through this iterative process, increases in debt may increase the rates of return on equity as well. This can be reflected directly through the

use of CAPM by levering and unlevering betas. If a build-up model is used it is more subjective.

When valuing a controlling interest in a company, there is controversy about whether to use an optimal capital structure based on guideline public companies and/or industry benchmark data, or to use the current capital structure if that is what is anticipated to be employed by the owners of the company. This depends on the type of valuation being prepared. The valuation could be from the prospective of a sale to an owner that could employ a different capital structure. If the company is being valued on a stand-alone basis and the owners want to know what it is worth to them the way they operate it, the existing capital structure may be used. In the valuation of LEGGO the company is going to change to its optimal capital structure, so that was used here.

From this amount, a 3 percent growth factor is deducted to arrive at a net cash flow capitalization rate for the next year which is 15.75 percent. The 3 percent growth factor is a long-term inflationary component used to adjust the capitalization rate. The rate derived after deducting the 3 percent was divided by one plus the growth rate to arrive at a net cash flow capitalization rate for the current year. In this instance, the rate amounts to 15 percent (rounded).

VV

Supporting Growth Rates

The selection of the sustainable growth rate can have a large effect on the value conclusion. Price multiples and, therefore, values are very sensitive to growth. Many analysts use the inflation rate as the perpetual growth rate in the capitalized cash flow method, as is used for LEGGO. Others use the average nominal (real and inflation) growth of the Gross Domestic Product (GDP) of the United States, which has been 6 percent when measured from 1926 to the present. Others use what they believe to be the anticipated or long-term industry growth rate. Economic and industry information can be helpful in supporting the growth rate. The company's historical growth is also a consideration.

Some analysts will use a growth rate into perpetuity that exceeds the nominal growth rate for the GDP of the United States. If that assumption is made, at some point in time in the future, perhaps several hundred years, the company's value will be greater than the GDP of the United States. In a competitive capitalistic society, it is difficult for a single company to outperform the general economy over the long term. This presentation can be difficult to defend. However, there are several circumstances where the growth rate can be higher than nominal GDP. If there will be a high growth rate for the company in the next several years and then a stabilization of the company at the GDP or some other lower rate, a blended rate may be used. A hybrid growth rate or average could be employed that would reflect the high growth rate over the next several years versus a later stabilized growth rate such as GDP. This presentation is used sometimes when the valuation is taking place in a venue where discounted cash flow is not accepted.

Capitalized Cash Flow Method Conclusion of Value on a Marketable, Control Interest Basis

The indicated value of the Company's invested capital determined under this method was $6,673,093, which was stated on a marketable, control interest basis. The final step was to add any nonoperating/excess assets and subtract any structured debt that the Company possessed at the date of valuation. In this instance, the Company possessed excess/nonoperating assets of $388,580. These assets consist mostly of marketable securities. The Company also held interest bearing debt of $918,121. Thus, after adding the nonoperating assets to the value of the operations, a value of $6,143,552 is derived as follows:

Invested capital	$6,673,093
Plus: Nonoperating/excess assets	388,580
Less: Interest bearing debt	918,121
Equity value	$6,143,552

Discounted Cash Flow Method

This method is a multiple period valuation model that converts a future series of "cash flow" into value by reducing it to present worth at a rate of return (discount rate) that reflects the risk inherent therein and matches the cash flows. The "cash flow" might be pretax, after-tax, debt-free, free cash flow, or some other measure deemed appropriate by and as adjusted by the analyst. Future income or cash flow is typically determined through projections provided by the Company. However, no such projections were available or attainable. Furthermore, given the trends and growth prospects of the company, the Capitalized Cash Flow (CCF) method of the income approach was deemed more appropriate.

VV

DCF versus CCF

In a company that anticipates growing at a steady rate in the future, it is unnecessary to prepare a discounted cash flow method. A capitalized cash flow method, as used here in the valuation of LEGGO, is sufficient. Discounted cash flow methods typically are used when short-term growth is anticipated to be different from long-term growth and/or the company's cash flow has not reached a stabilized or normalized period that can be capitalized into perpetuity.

In situations where the discounted cash flow method would be typically used, some analysts will reject it if projections are not provided by the client. Most often the client will prepare projections in situations where DCF is more appropriate. For LEGGO there were no projections available for the company. However, again, this is a moot point because the company was anticipated to grow over the long term at the average rate of inflation. In circumstances where the client will not or cannot prepare projections, some analysts will prepare them. If CPAs are performing the valuation, they must consider whether the rules on prospective financial information apply. Some CPAs or analysts provide the clients with the tools to prepare the projections. These tools can include structured questions to the client on anticipated

growth rates in revenues and anticipated profit margins. The analysts can then be a conduit for that information and put it in its appropriate format for valuation. However, ultimately those projections would be management's, and may necessitate a representation letter from the company's management to the analyst.

Market Approach

Guideline Company Transactions Method

This method values a company by finding acquisitions of guideline company's in the marketplace and applying the multiples that those companies sold at to the subject company data to derive a value. In this instance, we researched various databases and found applicable transactions in two databases. These databases include *Pratt's Stats* and IBA(Institute of Business Appraisers). The transactions discovered within these databases are considered relevant.

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Transaction Database Differences

There are six main general databases that are used for transactions. They are *Pratt's Stats*, Institute of Business Appraisers (IBA), Done Deals, Bizcomps Securities Data and *MergerStat Review*. The first four generally contain the most information for small to medium size companies. There are other resources as well that are more particular to certain industries. However, these are the most often used databases in general practice. Some analysts subscribe to all the databases to obtain as much data as possible; others utilize only certain ones. In this valuation, the analyst reviewed and used information from *Pratt's Stats* and IBA.

One of the common mistakes made in the application of transaction multiples is to aggregate the transactions from the different databases. This will result in an inaccurate valuation since each one of the databases collects and presents its data in a different format. For example, some of the databases use invested capital multiples, some use equity multiples, some include working capital, some include debt, some include inventory, etc. When using these databases, it is recommended that information from each database be used and applied separately to the subject company's revenue and earnings parameters. This will avoid any possible inaccuracies.

Pratt's Stats Database. This database provides a list of transactions of companies in various industry sectors. In this instance, we researched the water, sewer, and pipeline construction sector and found transactions that took place prior to the date of valuation. The list of transactions includes sales from 1996 to the present time and includes nine transactions. Using this database, we have calculated values based on gross revenues and net income. The values calculated using this database are presented below.

	Values Calculated
Sales Price to Gross Revenue	$6,915,495
Sales Price to Net Income	$6,974,419
Average Value on Non-Marketable, Control Interest Basis	$6,944,957

IBA Database. This database also provides a list of transactions of companies in various industry sectors. In this instance, we researched the water, sewer, and pipeline construction sector and found a list of transactions that took place prior to the date of valuation. The list of transactions includes sales from 1991 to the present time and includes four transactions. Using this database, we have calculated values based on gross revenues and discretionary cash flows. To each value, however, we added and deducted some balance sheet items. The multiples derived from the IBA database apply only to the value of fixed assets and intangibles. Thus, to obtain a total entity value, all current assets must be added and all liabilities must be deducted. The values using this database are presented in the following table.

	Values Calculated
Sales Price to Gross Revenue	$4,630,801
Sales Price to Discretionary Cash Flows	$3,267,016
Average	$3,948,908
Add: Current Assets	$3,090,597
Less: Total Liabilities	($1,864,359)
Value on Nonmarketable, Control Interest Basis	$5,175,146

The following table presents the conclusions of value for each database after adding the nonoperating assets that the Company possesses.

	Pratt's Stats	IBA
Nonmarketable, Control Interest Value	$6,944,957	$5,175,146
Add: Nonoperating Assets	$388,580	$388,580
Total Indicated Value of LEGGO Construction, Inc. on a Nonmarketable, Control Basis	$7,333,537	$5,563,726

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Is a Controlling Interest Nonmarketable?

The analyst in this valuation concludes that the result of the transaction method is a nonmarketable control basis value. Some analysts believe that the term nonmarketable as it applies to a control interest is inappropriate. However, the price of the transaction should reflect some reasonable amount of time to sell the company such that marketability issues are in the value.

Guideline Public Company Method

A market approach using guideline public companies requires estimates of a capitalization rate (or multiple) derived from publicly traded guideline companies and ongoing earnings (or a variation thereof such as EBIT) for the subject entity.

Search for Guideline Public Companies. Guideline public companies should provide a reasonable basis for comparison to the relevant investment characteristics of a company being valued. Guideline companies are most often publicly traded companies in the same or similar business as the valuation subject. Guideline companies are used as a basis to develop valuation conclusions with respect to a subject company under the presumption that a similar market may exist for the Subject Company as exists for the guideline companies.

Ideal guideline companies are in the same business as the company being valued. However, if there is insufficient evidence in the same business, it may be necessary to consider companies with an underlying similarity of relevant investment characteristics, such as markets, products, growth, cyclical variability, and other salient factors.

Our procedure for deriving guideline companies involved five steps:

1. Identify the industry in which the Company operates.
2. Identify the Standard Industrial Classification Code for the industry in which the Company operates.
3. Using Internet search tools, search filings with the SEC for businesses that are similar to the Subject Company.
4. Screen the initial group of companies to eliminate those that have negative earnings, those with a negative long-term debt to equity ratio, and those companies for which the price of their stock could not be obtained.
5. Review in detail the financial and operational aspects of the remaining potential guideline companies and eliminate those whose services differ from the Subject Company.

Based on the above criteria, our search identified two publicly traded companies that we believe are similar to the Company. The companies selected were:

1. Kaneb Services, Inc.: Headquartered in Richardson, Texas, this company provides on-site services such as sealing underpressure leaks for chemical plants, pipelines and power companies.
2. Infracorps, Inc.: Headquartered in Richmond, Virginia, this company specializes in the installation and renovation of water, wastewater, and gas utility pipelines. The company is now focusing on trenchless technology for the repair of subsurface pipelines.

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Selecting Guideline Public Companies

Kaneb's revenue is 30 times as large as LEGGO whereas Infracorps is twice as large. Some analysts would eliminate Kaneb, or adjust it's multiples downward, because it is much larger than LEGGO. Furthermore, it does not operate in exactly the same industry. Infracorps seems to be a better fit in terms of size as well as the types of construction services it provides. Some analysts would have eliminated Kaneb and relied only on Infracorps. That would result in reliance on only one guideline public company, a presentation that may be more difficult to defend. Other analysts would completely reject the guideline public company method as it applies to LEGGO. Given the lack of good

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guideline companies, the analyst here decided to use the guideline public company method only as a reasonableness test for the income approach.

Some analysts believe that guideline public companies typically are not applicable to smaller businesses, such as LEGGO. However, some of these analysts are often surprised by the number of publicly traded companies that are similar in size to private companies in certain industries. At the very least, in valuing a small business, a review of public companies should be undertaken to determine whether there are any similar companies.

Some analysts believe that the selection process for guideline public companies can be expanded outside the particular industry in which the company operates. They will look for similar investment characteristics, such as growth, return on equity, profit margin, and the like. Their belief is that a prudent investor would invest in companies that have similar characteristics regardless of its industry. Generally, the courts have been reluctant to accept companies outside the subject companies industry that are not at least somewhat similar by product, market, and so on.

We have chosen to use four multiples to value the Company.

1. earnings before interest and taxes (EBIT),
2. revenues,
3. assets, and
4. equity.

We believe that the asset and equity multiples are appropriate because construction companies tend to be asset intensive. We also believe that the EBIT and revenue multiples are appropriate because the Company has a strong income statement and is profitable. We have calculated both one-year and three-year multiples due to the cyclical nature of the industry. No adjustments have been made to the financial statements of the guideline companies as we believe none are necessary.

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Selecting Guideline Company Valuation Multiples
Minority versus Control

A variety of multiples can be used to value a company. In this situation the analyst used invested capital to EBIT, invested capital to revenues, invested capital to assets and price to equity. Other multiples that could have been considered are invested capital to EBITDA, invested capital to debt-free net income and invested capital to debt-free cash flow. This is a subjective area, and the analyst should consider all potential multiples and decide which ones may be the best fit.

Some recent controversy has emerged due to the recent volatility of the stock market. Since stock prices and P/E multiples can change so rapidly, some analysts believe that some type of average stock price or P/E multiple should be used as opposed to a P/E multiple based on a particular point in time. Traditional valuation theory holds that the value should be as of a single point in time, typically as of a single day. They believe that whatever the day the val-

uation is, the stock price of that day should be used. Other analysts feel the stock price is affected by factors that have occurred recently, that are not yet affecting the company's earnings. They believe that some type of adjustment and/or averaging technique should be used. In addition to using historical P/E type multiples, which has traditionally been price divided by some historical income figure, some analysts use price to projected income figures. They believe this a better fit of the price of the stock versus the anticipated performance of the company.

There is also controversy about whether the application of the market approach results in a minority value or a control value. Those who believe it is a minority value argue that the underlying public stocks are minority interests, such that the application of a valuation multiple would result in a minority value. Others argue that the valuation multiples are nothing more than the inverse of capitalization rates derived from the public market. Consequently, they believe that the underlying theory about minority/control being in the cash flows for the income approach should also apply to the market approach.

We performed a ratio analysis of the guideline companies to determine which company was more comparable to the Company. Each company compares reasonably well to the Company by the different ratios. Thus, we have selected the average multiples.

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Applying Guideline Public Company Valuation Multiples

Some analysts use an average of the multiples to derive a value. Some use an arithmetic average (mean). That is the sum of the indications divided by the number of indications. Others believe that the median average is a better fit because it is not affected by outliers and is the midpoint. Other analysts believe that they should look at each guideline company multiple separately, decide which ones are the most comparable, and rely on those multiples rather than an average of the multiples. Other analysts use some average and then take a "fundamental discount" from that average to reflect the fact that the subject company may be different than the public companies making up the average. This fundamental discount often is used to adjust for size as well.

There is also some discussion about whether the multiples used from publicly traded companies should be the most recent multiples, typically based on annual, fiscal year-end or four-quarter trailing figures or a multiple of some average earnings, such as a three-year average. If it is believed that an average multiple would be more indicative of future performance of a company then that may be more appropriate. Many analysts use both, the most recent period and a historical period, and weight them according to what they think would be most indicative of the future value and performance of the company.

We have not applied any size premiums to the Company or fundamental discounts to the guideline company multiples in this case. We also put more weight on the income measures of value. As mentioned previously, we must add the nonoperating assets to the value to arrive at a total indicated value. Applying these selected multiples to the one- and three-year average parameter of the Company's EBIT, revenues, assets, and equity provides the following values.

1-Year Value

	Values
Selected Value	$5,000,000
Add: Nonoperating Assets	$388,580
Value on Marketable, Control Interest Basis	$5,388,580

3-Year Value

	Values
Selected Value	$6,000,000
Add: Nonoperating Assets	$ 388,580
Value on Marketable, Control Interest Basis	$6,388,580

LACK OF MARKETABILITY DISCOUNT

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DLOMs Applied to Control Interests

There is continuing controversy about whether discounts for lack of marketability should be applied to a controlling interest, particularly a 100 percent controlling interest, as we have with LEGGO. Many analysts believe that a 100 percent interest is marketable and no discount would apply. Other analysts believe that it depends on the underlying methodology used to derive the prediscount value. For example, when using valuation multiples and rates of return derived from public company data, the rates of return and multiples reflect the fact that the public stocks can be sold in a very short amount of time, typically within three days. A private company cannot be sold within three days. Some analysts believe that the underlying method assumes such marketability, which does not exist in a controlling interest in a private company. Thus some level of discount may be appropriate. There are no known widely accepted empirical studies to determine discounts for lack of marketability of a 100 percent controlling interest in a business. Many analysts rely on discount for lack of marketability studies for minority interests and subjectively reduce the discount to reflect the 100 percent control.

We have valued at 100 percent interest in LEGGO. However, what if we were valuing a 50 percent interest with one other 50 percent owner? Would a discount for lack of control and/or a discount for lack of marketability be appropriate? A 50 percent interest with another 50 percent interest essentially grants the 50 percent owner veto power in most states. That is a better position to be in than a minority position with one other controlling shareholder. Some discount for lack of control and some discount for lack of marketability would be appropriate, but probably not as great as in a minority situation.

Selection of Applicable Discount for Lack of Marketability

To quantify the discount for lack of marketability applicable to the control, marketable ownership interest in the Company, we considered these factors to have an impact on the magnitude of the discount.

- Marketability implied in underlying valuation methodology
- Uncertain time horizon to complete the offering or sale
- Cost to prepare for and execute the offering or sale
- Risk concerning eventual sale price
- Noncash and deferred transaction proceeds

Based on analysis of the factors we believe affect the lack of marketability discount, it is our opinion that the appropriate discount for lack of marketability is 5 percent for a control interest.

CORRELATION OF VALUES

To reach a final conclusion for the value of the stockholders' equity on a nonmarketable, control basis, we considered all methods, each of which was subjectively weighed according to its merits as an indicator of value. In this instance, we believe that the CCF method gave the best indication of value because of the discernible trends of the company. This value is supported by the other methods. The guideline company transaction method (GCTM) was not chosen as the best indication of value due to the age of some of the transactions and the lack of detailed knowledge of the terms of the transactions. The guideline public company method (GPCM) was also not chosen as the best indication of value since there were only two companies and one of them was much larger and not as good a fit based on the industry description.

Method	Marketable, Control Basis	Discount for Lack of Marketability	Nonmarketable, Control Basis
Capitalized Cash Flow Method	$6,143,552	5%	$5,835,374
GCTM Pratt's Stats Database			$7,333,537
GCTM IBA Database			$5,563,726
GPCM—1 Year	$5,388,580	5%	$5,119,151
GPCM—3 Year	$6,388,580	5%	$6,069,151
Selected Value on Nonmarketable, Control Interest Basis (Rounded)			$5,800,000

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Reconciling Values

In correlating and reconciling values, many analysts use a simple arithmetic average of all the indications of value. What this may imply is that each method has equal weight, equal validity, and equal accuracy. This is seldom the case in a business valuation. Other analysts assign weights to each of the

(continues)

methods such as 0.5 to the income approach, 0.2 to the guideline public company approach, and 0.1 to transactions. However, again, this may imply precision that does not exist. Also, if you are only putting a 10 percent weight on a method, you may be indicating that that method may not be very accurate or reliable.

Many analysts, including the one that valued LEGGO, will look at each one of the methodologies and decide which ones they believe result in the most valid answer and then pick a value based on that qualitative judgment.

TOTAL CONCLUSION OF VALUE ON A NONMARKETABLE, CONTROL BASIS

In our opinion, the fair market value of 100 percent of the common stock of LEGGO Construction, Inc., on a nonmarketable, control basis as of December 31, 1999 for management purposes is approximately (rounded):

$5,800,000

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