

Merger, Acquisition & Restructuring

BASIC CONCEPTS AND FORMULAE

1. Introduction

The terms 'mergers', 'acquisitions' and 'takeovers' are often used interchangeably in common parlance. However, there are differences. While merger means unification of two entities into one, acquisition involves one entity buying out another and absorbing the same. In India, in legal sense merger is known as 'Amalgamation'.

2. Reconstruction

Reconstruction involves the winding-up of an existing company and transfer of its asset and liabilities to a new company formed to take the place of the existing company. In the result, the same shareholders who agree to take equivalent shares in the new company carry on the same enterprise through the medium of a new company.

3. Amalgamation or Merger

"Generally, where only one company is involved in a scheme and the rights of the shareholders and creditors are varied, it amounts to *reconstruction* or *reorganisation* or *scheme of arrangement*. In an amalgamation, two or more companies are fused into one by merger or by one taking over the other. Amalgamation is a blending of two or more existing undertakings into one undertaking, the shareholders of each blending company become substantially the shareholder of the company which is to carry on the blended undertaking.

4. Types of Mergers

- (a) **Horizontal merger:** The two companies which have merged are in the same industry, normally the market share of the new consolidated company would be larger and it is possible that it may move closer to being a monopoly or a near monopoly.
- (b) **Vertical merger:** It means the merger of two companies which are in different field altogether, the coming together of two concerns may give rise to a situation similar to a monopoly.
- (c) **Reverse merger-** Where, in order to avail benefit of carry forward of losses which are available according to tax law only to the company which had incurred them, the profit making company is merged with companies having accumulated losses.

- (d) **Conglomerate Mergers-** Such mergers involve firms engaged in unrelated type of business operations. In other words, the business activities of acquirer and the target are not related to each other horizontally (i.e. producing the same or competing products) nor vertically (having relationship of buyer and supplier). In a pure conglomerate merger, there are no important common factors between the companies in production, marketing, research and development and technology.
- (e) **Congeneric Merger-** In these mergers, the acquirer and the target companies are related through basic technologies, production processes or markets. The acquired company represents an extension of product-line, market participants or technologies of the acquirer. These mergers represent an outward movement by the acquirer from its current business scenario to other related business activities.

5. Reasons and Rationale for Mergers and Acquisitions

The most common reasons for Mergers and Acquisition (M&A) are:

- Synergistic operating economies;
- Diversification;
- Taxation;
- Growth; and
- Consolidation of production capacities and increasing market power.

6. Gains from Mergers or Synergy

The first step in merger analysis is to identify the economic gains from the merger. There are gains, if the combined entity is more than the sum of its parts. That is, Combined value > (Value of acquirer + Stand alone value of target).

The difference between the combined value and the sum of the values of individual companies is usually attributed to *synergy*.

Value of acquirer + Stand alone value of target + Value of synergy = Combined value

7. Principal Steps in a Successful M & A Program

- Manage the pre-acquisition phase;
- Screen candidates;
- Eliminate those who do not meet the criteria and value the rest;
- Negotiate; and

- Post-merger integration.

8. Problems for M & A in India

- Indian corporates are largely promoter-controlled and managed.
- In some cases, the need for prior negotiations and concurrence of financial institutions and banks is an added rider, besides SEBI's rules and regulations.
- The reluctance of financial institutions and banks to fund acquisitions directly.
- The BIFR route, although tedious, is preferred for obtaining financial concessions.
- Lack of exit policy for restructuring/downsizing.
- Absence of efficient capital market system makes the market capitalisation not fair in some cases.
- Valuation is still evolving in India.

9. Mergers in Specific Sectors

The Companies Act, 1956 and the SEBI's Takeover Code are the general source of guidelines governing mergers. There are sector specific legislative provisions, which to a limited extent empower the regulator to promote competition. Mergers in the banking sector require approval from the RBI.

10. Acquisitions and Takeover

Acquisition refers to the purchase of controlling interest by one company in the share capital of an existing company. When a company is acquired by another company, the acquiring company has two choices either to merge both the companies into one and function as a single entity and another is to operate the company as an independent entity with changed management and policies. The first one is termed as '**Merger**', whereas the second one is known as '**Takeover**'.

11. The Evolution of Takeovers, Principles and Enforcement–The Indian Scenario

There are basically two major modes of takeover which are prevalent in India- Takeover through direct negotiations with Financial Institutions and Takeover by acquisition of adequate shareholding. Acquisition or Takeover may be by way of:

- (i) Acquisition of company's shares.
- (ii) Acquisition of business assets (ABOs).
- (iii) Acquisition of brand's.
- (iv) Acquisition of Companies by Friendly vs. Hostile takeover.

- (v) Reverse acquisition.

12. Takeover Strategies

Other than tender offer, the acquiring company can also use the following techniques:

- **Street Sweep:** It refers to the technique where the acquiring company accumulates large number of shares in a target company before making an open offer.
- **Bear Hug:** When the acquirer threatens the target company to make an open offer, the board of the target company agrees to a settlement with the acquirer for change of control.
- **Strategic Alliance:** This involves disarming the acquirer by offering a partnership rather than a buyout. The acquirer asserts control from within and takes over the target company.
- **Brand Power:** This refers to entering into an alliance with powerful brands to displace the target's brands and as a result, buyout the weakened company.

13. Takeover by Reverse Bid

In a 'reverse takeover', a smaller company gains control of a larger one. The concept of takeover by reverse bid, or of reverse merger, is thus not the usual case of amalgamation of a sick unit which is non-viable with a healthy or prosperous unit but is a case whereby the entire undertaking of the healthy and prosperous company is to be merged and vested in the sick company which is non-viable.

14. The Acquisition Process

The acquisition process involves the following five essential stages:

- (i) Competitive analysis;
- (ii) Search and screen;
- (iii) Strategy development;
- (iv) Financial evaluation; and
- (v) Negotiation.

15. Defending a Company in a Takeover Bid

Due to the prevailing guidelines, the target company without the approval of the shareholder cannot resort to any issuance of fresh capital or sale of assets etc., and also due to the necessity of getting approvals from various authorities. Thus, the target company cannot refuse transfer of shares without the consent of shareholders in a general meeting.

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A target company can adopt a number of tactics to defend itself from hostile takeover through a tender offer.

- Divestiture;
- Crown jewels;
- Poison pill;
- Poison Put;
- Greenmail;
- White knight ;
- White squire;
- Golden parachutes ; and
- Pac-man defense.

16. Legal Aspects of M & As

Merger control requirements in India are currently governed by the provisions of the Companies Act, 1956 and the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations, 1997. ("the takeover code"). Other statutes which govern merger proposals are the Industries (Development and Regulation) Act, 1951; the Foreign Exchange Management Act, 2000, the Income Tax Act, 1961 and the SEBI Act, 1992.

17. Due Diligence

Due diligence means research. Its purpose in M&A is to support the valuation process, arm negotiators, test the accuracy of representations and warranties contained in the merger agreement, fulfill disclosure requirements to investors, and inform the planners of post-merger integration.

A due diligence process should focus at least on the following issues:

- Legal issues;
- Financial and tax issues;
- Marketing issues;
- Cross-border issues; and
- Cultural and ethical issues.

18. Target Valuation for M & A

The value of a business is a function of the business logic driving the M&A and is based on bargaining powers of buyers and sellers. Thorough due diligence has to be

exercised in deciding the valuation parameters since these parameters would differ from sector to sector and company to company. Some methods of valuation are:

- (a) **Earnings based** valuation (discounted cash-flow being the most common technique) takes into consideration the future earnings of the business and hence the appropriate value depends on projected revenues and costs in future, expected capital outflows, number of years of projection, discounting rate and terminal value of business.
- (b) In a **cost to create** approach, the cost for building up the business from scratch is taken into consideration and the purchase price is typically the cost plus a margin.
- (c) While using **the market based valuation** for unlisted companies, comparable listed companies have to be identified and their market multiples (*such as market capitalizations to sales or stock price to earnings per share*) are used as surrogates to arrive at a value.
- (d) **The asset based value** considers either the book value (assets net liabilities) or the net adjusted value (revalued net assets). If the company has intangible assets like brands, copyrights, intellectual property etc., these are valued independently and added to the net asset value to arrive at the business value.

19. Corporate Restructuring

Restructuring of business is an integral part of modern business enterprises. Restructuring usually involves major organizational changes such as shift in corporate strategies. Restructuring can be internally in the form of new investments in plant and machinery, Research and Development of products and processes, hiving off of non-core businesses, divestment, sell-offs, de-merger etc. Restructuring can also take place externally through mergers and acquisitions (M&A) and by forming joint-ventures and having strategic alliances with other firms. The aspects relating to expansion or contraction of a firm's operations or changes in its assets or financial or ownership structure are known as corporate re-structuring.

20. Reasons for Demerger/Divestment

There are various reasons for divestment or demerger viz.

- (i) To pay attention on core areas of business;
- (ii) The division's/business may not be sufficiently contributing to the revenues;
- (iii) The size of the firm may be too big to handle; and
- (iv) The firm may be requiring cash urgently in view of other investment

opportunities.

21. Different Ways of Divestment or Demerger

- (a) **Sell off:** A sell off is the sale of an asset, factory, division, product line or subsidiary by one entity to another for a purchase consideration payable either in cash or in the form of securities.
- (b) **Spin-off:** In this case, a part of the business is separated and created as a separate firm.
- (c) **Split-up:** This involves breaking up of the entire firm into a series of spin off (by creating separate legal entities). The parent firm no longer legally exists and only the newly created entities survive.
- (d) **Carve outs:** This is like spin off however; some shares of the new company are sold in the market by making a public offer, so this brings cash. In carve out, the existing company may sell either majority stake or minority stake, depending upon whether the existing management wants to continue to control it or not.
- (e) **Sale of a Division:** In the case of sale of a division, the seller company is demerging its business whereas the buyer company is acquiring a business.

22. Corporate Controls

- (a) **Going Private:** This refers to the situation wherein a listed company is converted into a private company by buying back all the outstanding shares from the markets.
- (b) **Equity buyback:** This refers to the situation wherein a company buys back its own shares from the market. This results in reduction in the equity capital of the company. This strengthens the promoter's position by increasing his stake in the equity of the company.
- (c) **Restructuring of an existing business:** It may involve, for instance, downsizing and closing down of some unprofitable departments. May also include trimming the number of personnel.
- (d) **Buy-outs:** This is also known as Management buyouts (MBO). In this case, the management of the company buys a particular part of the business from the firm and then incorporates the same as a separate entity.
- (e) **Management buy-ins:** They are a similar form of transaction but differ in the sense that the entrepreneurs leading the transaction come from outside the company. The Buy-ins is a hybrid form involving both existing and new managements.

23. Financial Restructuring

Financial restructuring refers to a kind of internal changes made by the management in assets and liabilities of a company with the consent of its various stakeholders. This is a suitable mode of restructuring for corporate entities who have suffered from sizeable losses over a period of time. For such firms a plan of restructuring needs to be formulated involving a number of legal formalities (which includes consent of court, and other stake-holders viz., creditors, lenders and shareholders etc.).

24. Merger Failures or Potential Adverse Competitive Effects

The reasons for merger failures can be numerous. Some of the key reasons are:

- Acquirers generally overpay;
- The value of synergy is over-estimated;
- Poor post-merger integration; and
- Psychological barriers.

Most companies merge with the hope that the benefits of synergy will be realised. Synergy will be there only if the merged entity is managed better after the acquisition than it was managed before. Therefore, to make a merger successful, companies may follow the steps listed as under:

- Decide what tasks need to be accomplished in the post-merger period;
- Choose managers from both the companies (and from outside);
- Establish performance yardstick and evaluate the managers on that yardstick; and
- Motivate them.

25. Maximum Purchase Consideration

Maximum purchase consideration is value of vendor's business from the viewpoint of the purchaser. This is given by present value incremental cash flow accruing to the purchaser on acquisition of vendor's business. Some important points to be noted in this regard are:

- The discounting rate represents the rate of return desired from the operating activities.
- The operating cash flow of a business is the aggregate of cash flows generated by the operating assets.
- The acquisition of business can give rise to certain additional liabilities.
- In theory, a business has infinite life. However, in reality it is very difficult to

project cash flows to eternity. It is, therefore, usual to assume that the business shall be disposed off after the forecast period. The expected disposal value of the business, called the terminal or horizon value is a cash flow in the terminal year. The present value of terminal value is added with the present value of operating cash flows.

26. Acquiring for Shares

The acquirer can pay the target company in cash or exchange shares in consideration. The analysis of acquisition for shares is slightly different. The steps involved in the analysis are:

Estimate the value of acquirer's (self) equity;

- Estimate the value of target company's equity;
- Calculate the maximum number of shares that can be exchanged with the target company's shares; and
- Conduct the analysis for pessimistic and optimistic scenarios.

Exchange ratio is the number of acquiring firm's shares exchanged for each share of the selling firm's stock. Suppose company A is trying to acquire company B's 100,000 shares at ₹230. So the cost of acquisition is ₹ 230,00,000. Company A has estimated its value at ₹200 per share. To get one share of company B, A has to exchange $(230/200)$ 1.15 share, or 115,000 shares for 100,000 shares of B. The relative merits of acquisition for cash or shares should be analysed after giving due consideration to the impact on EPS, capital structure, etc.

27. Impact of Price- Earnings Ratio

The reciprocal of cost of equity is price-earning (P/E) ratio. The cost of equity, and consequently the P/E ratio reflects risk as perceived by the shareholders. The risk of merging entities and the combined business can be different. In other words, the combined P/E ratio can very well be different from those of the merging entities. Since market value of a business can be expressed as product of earning and P/E ratio ($P/E \times E = P$), the value of combined business is a function of combined earning and combined P/E ratio. A lower combined P/E ratio can offset the gains of synergy or a higher P/E ratio can lead to higher value of business, even if there is no synergy. In ascertaining the exchange ratio of shares due care should be exercised to take the possible combined P/E ratio into account.

Question 1

Explain the term "Demerger".

Answer

Demerger: The word 'demerger' is defined under the Income-tax Act, 1961. It refers to a situation where pursuant to a scheme for reconstruction/restructuring, an 'undertaking' is transferred or sold to another purchasing company or entity. The important point is that even after demerger; the transferring company would continue to exist and may do business.

Demerger is used as a suitable scheme in the following cases:

- Restructuring of an existing business
- Division of family-managed business
- Management 'buy-out'.

While under the Income tax Act there is recognition of demerger only for restructuring as provided for under sections 391 – 394 of the Companies Act, in a larger context, demerger can happen in other situations also.

Question 2

Explain the term 'Buy-Outs'.

Answer

A very important phenomenon witnessed in the Mergers and Acquisitions scene, in recent times is one of buy - outs. A buy-out happens when a person or group of persons gain control of a company by buying all or a majority of its shares. A buyout involves two entities, the acquirer and the target company. The acquirer seeks to gain controlling interest in the company being acquired normally through purchase of shares. There are two common types of buy-outs: Leveraged Buyouts (LBO) and Management Buy-outs (MBO). LBO is the purchase of assets or the equity of a company where the buyer uses a significant amount of debt and very little equity capital of his own for payment of the consideration for acquisition. MBO is the purchase of a business by its management, who when threatened with the sale of its business to third parties or frustrated by the slow growth of the company, step-in and acquire the business from the owners, and run the business for themselves. The majority of buy-outs is management buy-outs and involves the acquisition by incumbent management of the business where they are employed. Typically, the purchase price is met by a small amount of their own funds and the rest from a mix of venture capital and bank debt.

Internationally, the two most common sources of buy-out operations are divestment of

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parts of larger groups and family companies facing succession problems. Corporate groups may seek to sell subsidiaries as part of a planned strategic disposal programme or more forced reorganisation in the face of parental financing problems. Public companies have, however, increasingly sought to dispose of subsidiaries through an auction process partly to satisfy shareholder pressure for value maximisation.

In recessionary periods, buy-outs play a big part in the restructuring of a failed or failing businesses and in an environment of generally weakened corporate performance often represent the only viable purchasers when parents wish to dispose of subsidiaries.

Buy-outs are one of the most common forms of privatisation, offering opportunities for enhancing the performances of parts of the public sector, widening employee ownership and giving managers and employees incentives to make best use of their expertise in particular sectors.

Question 3

What is take over by reverse bid?

Answer

Take Over by Reverse Bid: In ordinary case, the company taken over is the smaller company; in a 'reverse takeover', a smaller company gains control of a larger one. This concept has been successfully followed for revival of sick industries. The concept of takeover by reverse bid, or of reverse merger, is thus not the usual case of amalgamation of a sick unit which is non-viable with a healthy or prosperous unit but is a case whereby the entire undertaking of the healthy and prosperous company is to be merged and vested in the sick company which is non-viable. Under the Sick Industrial Companies (Special Provision) Act, 1985, a company becomes a sick industrial company when there is erosion of its net worth. This alternative is also known as taking over by reverse bid.

The three tests in a takeover by reverse bid that are required to be satisfied are, namely, (i) the assets of the transferor company are greater than the transferee company; (ii) equity capital to be issued by the transferee company pursuant to the acquisition exceeds its original issued capital, and (iii) the change of control in the transferee company will be through the introduction of minority holder or group of holders.

In reverse takeover control goes to the shareholders (and usually management) of the company that is formally the target of the bid.

The term reverse takeover is also applied to the purchase of a listed company by an unlisted company with control passing to the shareholders and management of the unlisted company. This is sometimes known as a 'back door listing'.

A reverse takeover will almost always take place by way of a pure equity acquisition, also called a share swap.

A reverse takeover for the purpose of obtaining a back door listing is accomplished by the shareholders of the unlisted company selling all of their shares to the listed company in exchange for shares of the listed company.

This is a cost effective method of obtaining a public listing because it avoids the expenses associated with floatation. Sometimes, the unlisted company usually takes over a listed company; a company i.e., listed but not actively traded on the stock exchange.

Question 4

Write a short note on Financial restructuring

Answer

Financial restructuring, is carried out internally in the firm with the consent of its various stakeholders. Financial restructuring is a suitable mode of restructuring of corporate firms that have incurred accumulated sizable losses for / over a number of years. As a sequel, the share capital of such firms, in many cases, gets substantially eroded / lost; in fact, in some cases, accumulated losses over the years may be more than share capital, causing negative net worth. Given such a dismal state of financial affairs, a vast majority of such firms are likely to have a dubious potential for liquidation. Can some of these Firms be revived ? Financial restructuring is one such a measure for the revival of only those firms that hold promise/prospects for better financial performance in the years to come. To achieve the desired objective, 'such firms warrant / merit a restart with a fresh balance sheet, which does not contain past accumulated losses and fictitious assets and shows share capital at its real/true worth.

Question 5

B Ltd. is a highly successful company and wishes to expand by acquiring other firms. Its expected high growth in earnings and dividends is reflected in its PE ratio of 17. The Board of Directors of B Ltd. has been advised that if it were to take over firms with a lower PE ratio than it own, using a share-for-share exchange, then it could increase its reported earnings per share. C Ltd. has been suggested as a possible target for a takeover, which has a PE ratio of 10 and 1,00,000 shares in issue with a share price of ₹ 15. B Ltd. has 5,00,000 shares in issue with a share price of ₹ 12.

Calculate the change in earnings per share of B Ltd. if it acquires the whole of C Ltd. by issuing shares at its market price of ₹12. Assume the price of B Ltd. shares remains constant.

Answer

Total market value of C Ltd is = 1,00,000 x ₹ 15	= ₹ 15,00,000
PE ratio (given)	= 10
Therefore , earnings	= ₹ 15,00,000 /10

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	= ₹ 1,50,000
Total market value of B Ltd. is = 5,00,000 x ₹ 12	= ₹ 60,00,000
PE ratio (given)	= 17
Therefore, earnings	= ₹ 60,00,000/17
	= ₹ 3,52,941

The number of shares to be issued by B Ltd.

₹ 15,00,000 ÷ 12	= 1,25,000
Total number of shares of B Ltd	= 5,00,000 + 1,25,000 = 6,25,000
The EPS of the new firm is	= (₹ 3,52,941+₹1,50,000)/6,25,000
	= Re. 0.80
The present EPS of B Ltd is	= ₹ 3,52,941 /5,00,000
	= Re. 0.71

So the EPS of B will increase from Re. 0.71 to ₹ 0.80 as a result of merger.

Question 6

ABC Company is considering acquisition of XYZ Ltd. which has 1.5 crores shares outstanding and issued. The market price per share is ₹ 400 at present. ABC's average cost of capital is 12%. Available information from XYZ indicates its expected cash accruals for the next 3 years as follows:

Year	₹Cr.
1	250
2	300
3	400

Calculate the range of valuation that ABC has to consider. (PV factors at 12% for years 1 to 3 respectively: 0.893, 0.797 and 0.712).

Answer

VALUATION BASED ON MARKET PRICE

Market Price per share	₹ 400
Thus value of total business is (₹ 400 x 1.5 Cr.)	₹ 600 Cr.

VALUATION BASED ON DISCOUNTED CASH FLOW

Present Value of cash flows
(₹ 250 cr x 0.893) + (₹ 300 cr. X 0.797) + (₹ 400 cr. X 0.712) = ₹ 747.15 Cr.

Value of per share (₹ 747.15 Cr. / 1.5 Cr) ₹ 498.10 per share

RANGE OF VALUATION

	Per Share ₹	Total ₹ Cr.
Minimum	400.00	600.00
Maximum	498.10	747.15

Question 7

MK Ltd. is considering acquiring NN Ltd. The following information is available:

Company	Earning after tax(₹)	No. of Equity Shares	Market Value Per Share(₹)
MK Ltd.	60,00,000	12,00,000	200.00
NN Ltd.	18,00,000	3,00,000	160.00

Exchange of equity shares for acquisition is based on current market value as above. There is no synergy advantage available.

- (i) Find the earning per share for company MK Ltd. after merger, and
- (ii) Find the exchange ratio so that shareholders of NN Ltd. would not be at a loss.

Answer

- (i) Earning per share of company MK Ltd after merger:-

Exchange ratio 160 : 200 = 4 : 5.

that is 4 shares of MK Ltd. for every 5 shares of NN Ltd.

\ Total number of shares to be issued = $4/5 \times 3,00,000 = 2,40,000$ Shares.

\ Total number of shares of MK Ltd. and NN Ltd. = 12,00,000 (MK Ltd.) + 2,40,000 (NN Ltd.)
= 14,40,000 Shares

Total profit after tax = ₹ 60,00,000 MK Ltd.

= ₹ 18,00,000 NN Ltd.

= ₹ 78,00,000

\ EPS. (Earning Per Share) of MK Ltd. after merger

₹ 78,00,000 / 14,40,000 = ₹ 5.42 per share

- (ii) To find the exchange ratio so that shareholders of NN Ltd. would not be at a Loss:

Present earning per share for company MK Ltd.

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$$= ₹ 60,00,000/12,00,000 = ₹ 5.00$$

Present earning per share for company NN Ltd.

$$= ₹ 18,00,000/3,00,000 = ₹ 6.00$$

\ Exchange ratio should be 6 shares of MK Ltd. for every 5 shares of NN Ltd.

\ Shares to be issued to NN Ltd. = $3,00,000 \times 6/5 = 3,60,000$ shares

Now, total No. of shares of MK Ltd. and NN Ltd. = $12,00,000$ (MK Ltd.) + $3,60,000$ (NN Ltd.)
= $15,60,000$ shares

\ EPS after merger = $₹ 78,00,000/15,60,000 = ₹ 5.00$ per share

Total earnings available to shareholders of NN Ltd. after merger = $3,60,000$ shares $\times ₹ 5.00 = ₹ 18,00,000$.

This is equal to earnings prior merger for NN Ltd.

\ Exchange ratio on the basis of earnings per share is recommended.

Question 8

A Ltd. wants to acquire T Ltd. and has offered a swap ratio of 1:2 (0.5 shares for every one share of T Ltd.). Following information is provided:

	A Ltd.	T. Ltd.
Profit after tax	₹18,00,000	₹3,60,000
Equity shares outstanding (Nos.)	6,00,000	1,80,000
EPS	₹3	₹2
PE Ratio	10 times	7 times
Market price per share	₹30	₹14

Required:

- The number of equity shares to be issued by A Ltd. for acquisition of T Ltd.*
- What is the EPS of A Ltd. after the acquisition?*
- Determine the equivalent earnings per share of T Ltd.*
- What is the expected market price per share of A Ltd. after the acquisition, assuming its PE multiple remains unchanged?*
- Determine the market value of the merged firm.*

Answer

(a) (i) The number of shares to be issued by A Ltd.:

The Exchange ratio is 0.5

So, new Shares = 1,80,000 x 0.5 = 90,000 shares.

(ii) EPS of A Ltd. After a acquisition:

Total Earnings	(₹ 18,00,000 + ₹ 3,60,000)	₹21,60,000
No. of Shares	(6,00,000 + 90,000)	6,90,000
EPS	(₹ 21,60,000)/6,90,000)	₹3.13

(iii) Equivalent EPS of T Ltd.:

No. of new Shares	0.5
EPS	₹3.13
Equivalent EPS (₹ 3.13 x 0.5)	₹1.57

(iv) New Market Price of A Ltd. (P/E remaining unchanged):

Present P/E Ratio of A Ltd.	10 times
Expected EPS after merger	₹3.13
Expected Market Price (₹3.13 x 10)	₹31.30

(v) Market Value of merged firm:

Total number of Shares	6,90,000
Expected Market Price	₹31.30
Total value (6,90,000 x 31.30)	₹2,15,97,000

Question 9

ABC Ltd. is intending to acquire XYZ Ltd. by merger and the following information is available in respect of the companies:

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	ABC Ltd.	XYZ Ltd.
Number of equity shares	10,00,000	6,00,000
Earnings after tax (₹)	50,00,000	18,00,000
Market value per share (₹)	42	28

Required:

- What is the present EPS of both the companies?
- If the proposed merger takes place, what would be the new earning per share for ABC Ltd.? Assume that the merger takes place by exchange of equity shares and the exchange ratio is based on the current market price.
- What should be exchange ratio, if XYZ Ltd. wants to ensure the earnings to members are as before the merger takes place?

Answer

- Earnings per share = Earnings after tax / No. of equity shares
ABC Ltd. = ₹ 50,00,000 / 10,00,000 = ₹ 5
XYZ Ltd. = ₹ 18,00,000 / 6,00,000 = ₹ 3
- Number of Shares XYZ limited's shareholders will get in ABC Ltd. based on market value per share = ₹ 28 / 42 × 6,00,000 = 4,00,000 shares
Total number of equity shares of ABC Ltd. after merger = 10,00,000 + 4,00,000 = 14,00,000 shares
Earnings per share after merger = ₹ 50,00,000 + 18,00,000 / 14,00,000 = ₹ 4.86
- Calculation of exchange ratio to ensure shareholders of XYZ Ltd. to earn the same as was before merger:
Shares to be exchanged based on EPS = (₹ 3 / ₹ 5) × 6,00,000 = 3,60,000 shares
EPS after merger = (₹ 50,00,000 + 18,00,000) / 13,60,000 = ₹ 5
Total earnings in ABC Ltd. available to shareholders of XYZ Ltd. = 3,60,000 × ₹ 5 = ₹ 18,00,000.

Thus, to ensure that Earning to members are same as before, the ratio of exchange should be 0.6 share for 1 share.

Question 10

XYZ Ltd., is considering merger with ABC Ltd. XYZ Ltd.'s shares are currently traded at ₹ 20. It has 2,50,000 shares outstanding and its earnings after taxes (EAT) amount to ₹

5,00,000. ABC Ltd., has 1,25,000 shares outstanding; its current market price is ₹ 10 and its EAT are ₹ 1,25,000. The merger will be effected by means of a stock swap (exchange). ABC Ltd., has agreed to a plan under which XYZ Ltd., will offer the current market value of ABC Ltd.'s shares:

- (i) What is the pre-merger earnings per share (EPS) and P/E ratios of both the companies?
- (ii) If ABC Ltd.'s P/E ratio is 6.4, what is its current market price? What is the exchange ratio? What will XYZ Ltd.'s post-merger EPS be?
- (iii) What should be the exchange ratio; if XYZ Ltd.'s pre-merger and post-merger EPS are to be the same?

Answer

- (i) **Pre-merger EPS and P/E ratios of XYZ Ltd. and ABC Ltd.**

Particulars	XYZ Ltd.	ABC Ltd.
Earnings after taxes	5,00,000	1,25,000
Number of shares outstanding	2,50,000	1,25,000
EPS	2	1
Market Price per share	20	10
P/E Ratio (times)	10	10

- (ii) **Current Market Price of ABC Ltd.** if P/E ratio is 6.4 = ₹ 1 × 6.4 = ₹ 6.40

$$\text{Exchange ratio} = \frac{\text{₹ 20}}{\text{₹ 6.40}} = 3.125$$

Post merger EPS of XYZ Ltd.

$$= \frac{\text{₹ 5,00,000} + \text{₹ 1,25,000}}{2,50,000 + (1,25,000/3.125)}$$

$$= \frac{\text{₹ 6,25,000}}{2,90,000} = 2.16$$

- (iii) **Desired Exchange Ratio**

Total number of shares in post-merged company

$$= \frac{\text{Post-merger earnings}}{\text{Pre-merger EPS of XYZ Ltd}} = \frac{\text{₹ 6,25,000}}{2} = 3,12,500$$

Number of shares required to be issued

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$$= 3,12,500 - 2,50,000 = 62,500$$

Therefore, the exchange ratio is

$$62,500 : 1,25,000$$

$$= \frac{62,500}{1,25,000} = 0.50$$

Question 11

Company X is contemplating the purchase of Company Y. Company X has 3,00,000 shares having a market price of ₹ 30 per share, while Company Y has 2,00,000 shares selling at ₹ 20 per share. The EPS are ₹ 4.00 and ₹ 2.25 for Company X and Y respectively. Managements of both companies are discussing two alternative proposals for exchange of shares as indicated below:

- (i) In proportion to the relative earnings per share of two companies.
- (ii) 0.5 share of Company X for one share of Company Y (0.5 : 1).

You are required:

- (i) To calculate the Earnings Per Share (EPS) after merger under two alternatives; and
- (ii) To show the impact on EPS for the shareholders of two companies under both the alternatives.

Answer

(i) Mergers effect on EPS

(Exchange ratio in proportion to relative EPS)

(in ₹)

Company	Existing No. of shares	EPS	Total earnings
X	3,00,000	4.00	12,00,000
Y	2,00,000	2.25	<u>4,50,000</u>
		Total earnings	<u>16,50,000</u>

No. of shares after merger $3,00,000 + 1,12,500 = 4,12,500$

Note: 1,12,500 may be calculated as $\frac{2,00,000 \times 2.25}{4.00} = 1,12,500$

$$\text{EPS for Co. X after merger} = \frac{16,50,000}{4,12,500} = ₹ 4.00$$

Equivalent EPS of Co. Y

Before merger ₹ 2.25

After merger (EPS before merger ÷ Share exchange ratio on EPS basis)

$2.25 \div 0.5625 = ₹ 4.00$

Merger effect on EPS with share exchange ratio of 0.5 : 1

Total earnings after merger	₹ 16,50,000
No. of shares post merger (3,00,000 + 1,00,000 (0.5 × 2,00,000))	4,00,000
EPS $16,50,000 \div 4,00,000$	4.125

(ii) Impact on EPS

Co. X' shareholders	₹
EPS before merger	4.00
EPS after merger i.e. $(16,50,000 \div 4,00,000)$	<u>4.125</u>
Increase in EPS	<u>0.125</u>

Co. Y' Shareholders	
Equivalent EPS before merger $2.25 \div 0.5$	4.5
EPS after the merger	<u>4.125</u>
Decrease in EPS	<u>0.375</u>

Question 12

K. Ltd. is considering acquiring N. Ltd., the following information is available :

Company	Profit after Tax	Number of Equity shares	Market value per share
K. Ltd.	50,00,000	10,00,000	200.00
N. Ltd.	15,00,000	2,50,000	160.00

Exchange of equity shares for acquisition is based on current market value as above. There is no synergy advantage available :

Find the earning per share for company K. Ltd. after merger.

Find the exchange ratio so that shareholders of N. Ltd. would not be at a loss.

Answer

(i) **Earning per share for company K. Ltd. after Merger :**

Exchange Ratio $160 : 200 = 4 : 5$

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That is 4 shares of K. Ltd. for every 5 shares of N. Ltd.

$$\backslash \text{ Total number of shares to be issued} = \frac{4}{5} \times 2,50,000 = 2,00,000 \text{ shares}$$

\ Total number of shares of K. Ltd. and N. Ltd.	=	10,00,000	K. Ltd.
		+ <u>2,00,000</u>	N. Ltd.
		12,00,000	

Total profit after Tax =	₹	50,00,000	K. Ltd.
	₹	<u>15,00,000</u>	N Ltd.
	₹	65,00,000	

\ E.P.S. (Earning per share) of K. Ltd. after Merger

$$= \frac{\text{₹ } 65,00,000}{12,00,000} = \text{₹ } 5.42 \text{ Per Share}$$

(ii) To find the Exchange Ratio so that shareholders of N. Ltd. would not be at a Loss:

Present Earnings per share for company K. Ltd.

$$= \frac{\text{₹ } 50,00,000}{\text{₹ } 10,00,000} = \text{₹ } 5.00$$

Present Earnings Per share for company N. Ltd.

$$= \frac{\text{₹ } 15,00,000}{\text{₹ } 2,50,000} = \text{₹ } 6.00$$

\ Exchange Ratio should be 6 shares of K. Ltd. for every 5 shares of N Ltd.

\ Shares to be issued to N. Ltd.

$$= \frac{2,50,000 \times 6}{5} = 3,00,000 \text{ Shares}$$

\ Total No. of Shares of K.Ltd. and N. Ltd.

=	10,00,000	K. Ltd.
	+ <u>3,00,000</u>	N. Ltd
	13,00,000	

$$\backslash \text{ E.P.S. After Merger } \frac{65,00,000}{13,00,000} = \text{₹ } 5.00 \text{ Per Share}$$

Total Earnings Available to Shareholders of N. Ltd. after Merger

$$= \text{₹ } 3,00,000 \times \text{₹ } 5.00 = \text{₹ } 15,00,000$$

This is equal to Earnings prior Merger for N. Ltd.

\ Exchange Ratio on the Basis of Earnings per Share is recommended.

Question 13

M Co. Ltd., is studying the possible acquisition of N Co. Ltd., by way of merger. The following data are available in respect of the companies:

Particulars	M Co. Ltd.	N Co. Ltd.
Earnings after tax (₹)	80,00,000	24,00,000
No. of equity shares	16,00,000	4,00,000
Market value per share (₹)	200	160

- (i) If the merger goes through by exchange of equity and the exchange ratio is based on the current market price, what is the new earning per share for M Co. Ltd.?
- (ii) N Co. Ltd. wants to be sure that the earnings available to its shareholders will not be diminished by the merger. What should be the exchange ratio in that case?

Answer

(i) Calculation of new EPS of M Co. Ltd.

No. of equity shares to be issued by M Co. Ltd. to N Co. Ltd.

$$= 4,00,000 \text{ shares} \times \frac{\text{₹ } 160}{\text{₹ } 200} = 3,20,000 \text{ shares}$$

Total no. of shares in M Co. Ltd. after acquisition of N Co. Ltd.

$$= 16,00,000 + 3,20,000 = 19,20,000$$

Total earnings after tax [after acquisition]

$$= 80,00,000 + 24,00,000 = 1,04,00,000$$

$$\text{EPS} = \frac{\text{₹ } 1,04,00,000}{19,20,000 \text{ equity shares}} = \text{₹ } 5.42$$

(ii) Calculation of exchange ratio which would not diminish the EPS of N Co. Ltd. after its merger with M Co. Ltd.

Current EPS:

$$\text{M Co. Ltd.} = \frac{\text{₹ } 80,00,000}{16,00,000 \text{ equity shares}} = \text{₹ } 5$$

$$\text{N Co. Ltd.} = \frac{\text{₹ } 24,00,000}{4,00,000 \text{ equity shares}} = \text{₹ } 6$$

$$\text{Exchange ratio} = 6/5 = 1.20$$

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No. of new shares to be issued by M Co. Ltd. to N Co. Ltd.

$$= 4,00,000 \times 1.20 = 4,80,000 \text{ shares}$$

Total number of shares of M Co. Ltd. after acquisition

$$= 16,00,000 + 4,80,000 = 20,80,000 \text{ shares}$$

$$\text{EPS [after merger]} = \frac{\text{₹ } 1,04,00,000}{20,80,000 \text{ shares}} = \text{₹ } 5$$

Total earnings in M Co. Ltd. available to new shareholders of N Co. Ltd.

$$= 4,80,000 \times \text{₹ } 5 = \text{₹ } 24,00,000$$

Recommendation: The exchange ratio (6 for 5) based on market shares is beneficial to shareholders of 'N' Co. Ltd.

Question 14

The following information is provided related to the acquiring Firm Mark Limited and the target Firm Mask Limited:

	Firm Mark Limited	Firm Mask Limited
Earning after tax (₹)	2,000 lakhs	400 lakhs
Number of shares outstanding	200 lakhs	100 lakhs
P/E ratio (times)	10	5

Required:

- What is the Swap Ratio based on current market prices?
- What is the EPS of Mark Limited after acquisition?
- What is the expected market price per share of Mark Limited after acquisition, assuming P/E ratio of Mark Limited remains unchanged?
- Determine the market value of the merged firm.
- Calculate gain/loss for shareholders of the two independent companies after acquisition.

Answer

Particulars	Mark Ltd.	Mask Ltd.
EPS	₹ 2,000 Lakhs/ 200 lakhs = ₹ 10	₹ 400 lakhs / 100 lakhs ₹ 4
Market Price	₹ 10 × 10 = ₹ 100	₹ 4 × 5 = ₹ 20

- (i) The Swap ratio based on current market price is
 $\text{₹ } 20 / \text{₹ } 100 = 0.2$ or 1 share of Mark Ltd. for 5 shares of Mask Ltd.
 No. of shares to be issued = 100 lakh $\times$ 0.2 = 20 lakhs.
- (ii) EPS after merger

$$= \frac{\text{₹ } 2,000 \text{ lakhs} + \text{₹ } 400 \text{ lakhs}}{200 \text{ lakhs} + 20 \text{ lakhs}} = \text{₹ } 10.91$$
- (iii) Expected market price after merger assuming P / E 10 times.
 $= \text{₹ } 10.91 \times 10 = \text{₹ } 109.10$
- (iv) Market value of merged firm
 $= \text{₹ } 109.10 \text{ market price} \times 220 \text{ lakhs shares} = 240.02 \text{ crores}$
- (v) Gain from the merger
 Post merger market value of the merged firm ₹ 240.02 crores
 Less: Pre-merger market value
 Mark Ltd. 200 Lakhs $\times$ ₹ 100 = 200 crores
 Mask Ltd. 100 Lakhs $\times$ ₹ 20 = 20 crores ₹ 220.00 crores
 Gain from merger ₹ 20.02 crores
 Appropriation of gains from the merger among shareholders:

	Mark Ltd.	Mask Ltd.
Post merger value	218.20 crores	21.82 crores
Less: Pre-merger market value	200.00 crores	20.00 crores
Gain to Shareholders	18.20 crores	1.82 crores

Question 15

Simple Ltd. and Dimple Ltd. are planning to merge. The total value of the companies are dependent on the fluctuating business conditions. The following information is given for the total value (debt + equity) structure of each of the two companies.

Business Condition	Probability	Simple Ltd. ₹Lacs	Dimple Ltd. ₹Lacs
High Growth	0.20	820	1050
Medium Growth	0.60	550	825
Slow Growth	0.20	410	590

The current debt of Dimple Ltd. is ₹ 65 lacs and of Simple Ltd. is ₹ 460 lacs.

Calculate the expected value of debt and equity separately for the merged entity.

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Answer

Compute Value of Equity

Simple Ltd.

₹ in Lacs

	High Growth	Medium Growth	Slow Growth
Debit + Equity	820	550	410
Less: Debt	460	460	460
Equity	360	90	-50

Since the Company has limited liability the value of equity cannot be negative therefore the value of equity under slow growth will be taken as zero because of insolvency risk and the value of debt is taken at 410 lacs. The expected value of debt and equity can then be calculated as:

Simple Ltd.

₹ in Lacs

	High Growth		Medium Growth		Slow Growth		Expected Value
	Prob.	Value	Prob.	Value	Prob.	Value	
Debt	0.20	460	0.60	460	0.20	410	450
Equity	0.20	360	0.60	90	0.20	0	126
		820		550		410	576

Dimple Ltd.

₹ in Lacs

	High Growth		Medium Growth		Slow Growth		Expected Value
	Prob.	Value	Prob.	Value	Prob.	Value	
Equity	0.20	985	0.60	760	0.20	525	758
Debt	0.20	65	0.60	65	0.20	65	65
		1050		825		590	823

Expected Values

₹ in Lacs

Equity		Debt	
Simple Ltd.	126	Simple Ltd.	450
Dimple Ltd.	758	Dimple Ltd.	65
	884		515

Question 16

Following information is provided relating to the acquiring company Mani Ltd. and the target company Ratnam Ltd:

	Mani Ltd.	Ratnam Ltd.
Earnings after tax (₹ lakhs)	2,000	4,000
No. of shares outstanding (lakhs)	200	1,000
P/E ratio (No. of times)	10	5

Required:

- (i) What is the swap ratio based on current market prices?
- (ii) What is the EPS of Mani Ltd. after the acquisition?
- (iii) What is the expected market price per share of Mani Ltd. after the acquisition, assuming its P/E ratio is adversely affected by 10%?
- (iv) Determine the market value of the merged Co.
- (v) Calculate gain/loss for the shareholders of the two independent entities, due to the merger.

Answer

(i) SWAP ratio based on current market prices:

EPS before acquisition:

Mani Ltd. : ₹2,000 lakhs / 200 lakhs: ₹10

Ratnam Ltd.: ₹4,000 lakhs / 1,000 lakhs: ₹ 4

Market price before acquisition:

Mani Ltd.: ₹10 × 10 ₹100

Ratnam Ltd.: ₹4 × 5 ₹ 20

SWAP ratio: 20/100 or 1/5 i.e. 0.20

(ii) EPS after acquisition:

$$\frac{\text{Rs. (2,000 + 4,000) Lakhs}}{(200 + 200) \text{ Lakhs}} = ₹15.00$$

(iii) Market Price after acquisition:

EPS after acquisition : ₹15.00

P/E ratio after acquisition 10 × 0.9 9

Market price of share (₹ 15 X 9) ₹135.00

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(iv) Market value of the merged Co.:

₹135 × 400 lakhs shares

₹ 540.00 Crores

or ₹ 54,000 Lakhs

(v) Gain/loss per share:

	₹ Crore	
	Mani Ltd.	Ratnam Ltd.
Total value before Acquisition	200	200
Value after acquisition	<u>270</u>	<u>270</u>
Gain (Total)	<u>70</u>	<u>70</u>
No. of shares (pre-merger) (lakhs)	200	1,000
Gain per share (₹)	35	7

Question 17

P Ltd. is considering take-over of R Ltd. by the exchange of four new shares in P Ltd. for every five shares in R Ltd. The relevant financial details of the two companies prior to merger announcement are as follows:

	P Ltd	R Ltd
Profit before Tax (₹ Crore)	15	13.50
No. of Shares (Crore)	25	15
P/E Ratio	12	9

Corporate Tax Rate 30%

You are required to determine:

(i) Market value of both the company.

(ii) Value of original shareholders.

(iii) Price per share after merger.

(iv) Effect on share price of both the company if the Directors of P Ltd. expect their own pre-merger P/E ratio to be applied to the combined earnings.

Answer

	P Ltd.	R Ltd.
Profit before Tax (₹ in crore)	15	13.50
Tax 30% (₹ in crore)	4.50	4.05

Profit after Tax (₹ in crore)	10.50	9.45
Earning per Share (₹)	$\frac{10.50}{25} = ₹0.42$	$\frac{9.45}{15} = ₹0.63$
Price of Share before Merger (EPS x P/E Ratio)	$0.42 \times ₹12 = ₹5.04$	$0.63 \times ₹9 = ₹5.67$

(i) \ Market Value of company

P Ltd. = ₹ 5.04 x 25 Crore = ₹ 126 crore
R Ltd. = ₹ 5.67 x 15 Crore = ₹ 85.05 crore
Combined = ₹ 126 + ₹ 85.05 = ₹ 211.05 Crores

After Merger

	P Ltd.	R Ltd.
No. of Shares	25 crores	$15 \times \frac{4}{5} = 12$ crores
Combined	37 crores	
% of Combined Equity Owned	$\frac{25}{37} \times 100 = 67.57\%$	$\frac{12}{37} \times 100 = 32.43\%$

(ii) \ Value of Original Shareholders

P Ltd.	R Ltd.
₹ 211.05 crore x 67.57%	₹ 211.05 crore x 32.43%
= ₹ 142.61	= ₹ 68.44

(iii) \ Price per Share after Merger

$EPS = \frac{Rs.19.95 \text{ crore}}{37 \text{ crore}} = ₹ 0.539$ per share

P/E Ratio = 12

Market Value Per Share = ₹ 0.539 X 12 = ₹ 6.47

Total Market Value = ₹ 6.47 x 37 crore = ₹ 239.39 crore

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$$\text{Price of Share} = \frac{\text{Market Value}}{\text{Number of Shares}} = \frac{239.39 \text{ crore}}{37 \text{ crore}} = ₹ 6.47$$

(iv) Effect on Share Price

P Ltd.

Gain/loss (-) per share = ₹ 6.47 – ₹ 5.04 = ₹ 1.43

$$\text{i.e. } \frac{6.47 - 5.04}{5.04} \times 100 = 0.284 \text{ or } 28.4\%$$

\ Share price would rise by 28.4%

R Ltd.

$$6.47 \times \frac{4}{5} = ₹ 5.18$$

Gain/loss (-) per share = ₹ 5.18 – ₹ 5.67 = (₹ 0.49)

$$\text{i.e. } \frac{5.18 - 5.67}{5.67} \times 100 = (-) 0.0864 \text{ or } (-) 8.64\%$$

\ Share Price would decrease by 8.64%.

Question 18

The following information is provided relating to the acquiring company Efficient Ltd. and the target Company Healthy Ltd.

	Efficient Ltd.	Healthy Ltd.
No. of shares (F.V. ₹ 10 each)	10.00 lakhs	7.5 lakhs
Market capitalization	500.00 lakhs	750.00 lakhs
P/E ratio (times)	10.00	5.00
Reserves and Surplus	300.00 lakhs	165.00 lakhs
Promoter's Holding (No. of shares)	4.75 lakhs	5.00 lakhs

Board of Directors of both the Companies have decided to give a fair deal to the shareholders and accordingly for swap ratio the weights are decided as 40%, 25% and 35% respectively for Earning, Book Value and Market Price of share of each company:

- Calculate the swap ratio and also calculate Promoter's holding % after acquisition.
- What is the EPS of Efficient Ltd. after acquisition of Healthy Ltd.?

- (iii) What is the expected market price per share and market capitalization of Efficient Ltd. after acquisition, assuming P/E ratio of Firm Efficient Ltd. remains unchanged.
- (iv) Calculate free float market capitalization of the merged firm.

Answer

Swap Ratio	Efficient Ltd.	Healthy Ltd.
Market capitalisation	500 lakhs	750 lakhs
No. of shares	10 lakhs	7.5 lakhs
Market Price per share	₹ 50	₹ 100
P/E ratio	10	5
EPS	₹ 5	₹ 20
Profit	₹ 50 lakh	₹ 150 lakh
Share capital	₹ 100 lakh	₹ 75 lakh
Reserves and surplus	₹ 300 lakh	₹ 165 lakh
Total	₹ 400 lakh	₹ 240 lakh
Book Value per share	₹ 40	₹ 32

(i) **Calculation of Swap Ratio**

EPS	1 : 4 i.e.	4.0 ´ 40%	1.6
Book value	1 : 0.8 i.e.	0.8 ´ 25%	0.2
Market price	1 : 2 i.e.	2.0 ´ 35%	<u>0.7</u>
		Total	<u>2.5</u>

Swap ratio is for every one share of Healthy Ltd., to issue 2.5 shares of Efficient Ltd. Hence, total no. of shares to be issued $7.5 \text{ lakh} \times 2.5 = 18.75 \text{ lakh shares}$

Promoter's holding = 4.75 lakh shares + $(5 \times 2.5 = 12.5 \text{ lakh shares}) = 17.25 \text{ lakh i.e.}$
 Promoter's holding % is $(17.25 \text{ lakh} / 28.75 \text{ lakh}) \times 100 = 60\%$.

Calculation of EPS, Market price, Market capitalization and free float market capitalization.

(ii) Total No. of shares	10 lakh + 18.75 lakh = 28.75 lakh
Total capital	100 lakh + 187.5 lakh = ₹ 287.5 lakh
EPS	$\frac{\text{Total profit}}{\text{No. of shares}} = \frac{50 \text{ lakh} + 150 \text{ lakh}}{28.75 \text{ lakh}} = \frac{200}{28.75}$ = ₹ 6.956

- ### Question 19

The following information is given :

Janam Ltd., is interested in doing justice to both companies. The following parameters have been assigned by the Board of Janam Ltd., for determining the swap ratio:

Earning per share 50%

Market price 25%

You are required to compute

- ### Answer

	Abhiman Ltd. (₹)	Swabhiman Ltd. (₹)
Share capital	200 lacs	100 lacs

Free reserves & surplus	900 lacs	600 lacs
Total	1100 lacs	700 lacs
No. of shares	2 lacs	10 lacs
Book value for share	₹ 550	₹ 70
Promoters Holding	50%	60%
Non promoters holding	50%	40%
Free float market capitalization (Public)	500 lacs	₹ 156 lacs
Total Market Cap	1000 lacs	390 lacs
No. of shares	2 lacs	10 lacs
Market Price	₹ 500	₹ 39
P/E ratio	10	4
EPS	₹ 50.00	₹ 9.75

Calculation of SWAP Ratio

Book Value	1:0.1273	0.1273 × 25%	0.031825
EPS	1:0.195	0.195 × 50%	0.097500
Market Price	1:0.078	0.078 × 25%	<u>0.019500</u>
Total			<u>0.148825</u>

(i) SWAP Ratio is 0.148825 shares of Abhiman Ltd. for every share of Swabhiman Ltd.

Total No. of shares to be issued = 10 lakh × 0.148825 = 148825 shares

(ii) Book value, EPS & Market Price.

Total No. shares = 200000 + 148825 = 348825

Total capital = ₹200 lakh + ₹148.825 lac = ₹ 348.825 lac

Reserves = ₹ 900 lac + ₹ 551.175 lac = ₹ 1451.175 lac

Book value = $\frac{₹ 348.825 \text{ lac} + ₹ 1451.175 \text{ lac}}{3.48825 \text{ lac}} = ₹ 516.02$

EPS = $\frac{\text{Total Profit}}{\text{No. of shares}} = \frac{₹ 100 \text{ lac} + ₹ 97.50 \text{ lac}}{3.48825 \text{ lac}} = ₹ 56.62$

Expected market price = ₹ 56.62 × PE Ratio = ₹ 56.62 × 10 = ₹ 566.20

Question 20

The following information relating to the acquiring Company Abhiman Ltd. and the target Company Abhishek Ltd. are available. Both the Companies are promoted by Multinational

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Company, Trident Ltd. The promoter's holding is 50% and 60% respectively in Abhiman Ltd. and Abhishek Ltd. :

	Abhiman Ltd.	Abhishek Ltd.
Share Capital (₹)	200 lakh	100 lakh
Free Reserve and Surplus (₹)	800 lakh	500 lakh
Paid up Value per share (₹)	100	10
Free float Market Capitalisation (₹)	400 lakh	128 lakh
P/E Ratio (times)	10	4

Trident Ltd. is interested to do justice to the shareholders of both the Companies. For the swap ratio weights are assigned to different parameters by the Board of Directors as follows:

Book Value	25%
EPS (Earning per share)	50%
Market Price	25%

- (a) What is the swap ratio based on above weights?
- (b) What is the Book Value, EPS and expected Market price of Abhiman Ltd. after acquisition of Abhishek Ltd. (assuming P.E. ratio of Abhiman Ltd. remains unchanged and all assets and liabilities of Abhishek Ltd. are taken over at book value).
- (c) Calculate:
- (i) Promoter's revised holding in the Abhiman Ltd.
- (ii) Free float market capitalization.
- (iii) Also calculate No. of Shares, Earning per Share (EPS) and Book Value (B.V.), if after acquisition of Abhishek Ltd., Abhiman Ltd. decided to :
- (a) Issue Bonus shares in the ratio of 1 : 2; and
- (b) Split the stock (share) as ₹ 5 each fully paid.

Answer

(a) Swap Ratio

	Abhiman Ltd.	Abhishek Ltd.
Share Capital	200 Lakh	100 Lakh
Free Reserves	800 Lakh	500 Lakh
Total	1000 Lakh	600 Lakh
No. of Shares	2 Lakh	10 Lakh
Book Value per share	₹ 500	₹ 60
Promoter's holding	50%	60%
Non promoter's holding	50%	40%

Free Float Market Cap. i.e. relating to Public's holding	400 Lakh	128 Lakh
Hence Total market Cap.	800 Lakh	320 Lakh
No. of Shares	2 Lakh	10 Lakh
Market Price	₹ 400	₹ 32
P/E Ratio	10	4
EPS	40	8
Profits (₹ 2 X 40)	80	-
(₹ 8 X 10)	-	80

Calculation of Swap Ratio

Book Value	1 : 0.12 i.e.	0.12 x 25%	0.03
EPS	1 : 0.2	0.20 x 50%	0.10
Market Price	1 : 0.08	0.08 x 25%	<u>0.02</u>
		Total	<u>0.15</u>

Swap ratio is for every one share of Abhishek Ltd., to issue 0.15 shares of Abhiman Ltd.
Hence total no. of shares to be issued

$$10 \text{ Lakh} \times 0.15 = 1.50 \text{ lakh shares}$$

(b) Book Value , EPS & Market Price

Total No of Shares	2 Lakh + 1.5 Lakh = 3.5 Lakh
Total Capital	₹ 200 Lakh + ₹ 100 Lakh = ₹ 300 Lakh
Reserves	₹ 800 Lakh + ₹ 500 Lakh = ₹ 1,300 Lakh
Book Value	$\frac{\text{₹ 350 Lakh} + \text{₹ 1,250 Lakh}}{3.5 \text{ Lakh}} = \text{₹ 457.14 per share}$
EPS	$\frac{\text{Total Profit}}{\text{No. of Share}} = \frac{\text{₹ 80 Lakh} + \text{₹ 80 Lakh}}{3.5 \text{ Lakh}} = \frac{\text{₹ 160 Lakh}}{3.5}$ = ₹ 45.71

Expected Market Price EPS (₹ 45.71) x P/E Ratio (10) = ₹ 457.10

(c) (1) Promoter's holding

Promoter's Revised	Abhiman 50% i.e.	1.00 Lakh shares
Holding	Abhishek 60% i.e.	<u>0.90 Lakh shares</u>
	Total	<u>1.90 Lakh shares</u>

$$\text{Promoter's \%} = 1.90/3.50 \times 100 = 54.29\%$$

13.35 Strategic Financial Management

(2) Free Float Market Capitalisation

Free Float Market = (3.5 Lakh – 1.9 Lakh) x ₹ 457.10

Capitalisation = ₹ 731.36 Lakh

(3) (i) & (ii)

Revised Capital ₹ 350 Lakh + ₹ 175 Lakh = ₹ 525 Lakh

No. of shares before Split (F.V ₹ 100) 5.25 Lakh

No. of Shares after Split (F.V. Rs 5) 5.25 x 20 = 105 Lakh

EPS 160 Lakh / 105 Lakh = 1.523

Book Value Cap. ₹ 525 Lakh + ₹ 1125 Lakh

No. of Shares = 105 Lakh

= ₹ 15.714 per share

Question 21

You have been provided the following Financial data of two companies:

	Krishna Ltd.	Rama Ltd.
Earnings after taxes	₹ 7,00,000	₹ 10,00,000
Equity shares (outstanding)	₹ 2,00,000	₹ 4,00,000
EPS	3.5	2.5
P/E ratio	10 times	14 times
Market price per share	₹ 35	₹ 35

Company Rama Ltd. is acquiring the company Krishna Ltd., exchanging its shares on a one-to-one basis for company Krishna Ltd. The exchange ratio is based on the market prices of the shares of the two companies.

Required:

- What will be the EPS subsequent to merger?
- What is the change in EPS for the shareholders of companies Rama Ltd. and Krishna Ltd.?
- Determine the market value of the post-merger firm. PE ratio is likely to remain the same.
- Ascertain the profits accruing to shareholders of both the companies.

Answer

- | | | |
|-----|-------------------------|----------|
| (i) | Exchange Ratio | 1:1 |
| | New Shares to be issued | 2,00,000 |

	Total shares of Rama Ltd. (4,00,000+2,00,000)	6,00,000
	Total earnings (₹ 10,00,000 + ₹ 7,00,000)	₹ 17,00,000
	New EPS (₹ 17,00,000/6,00,000)	₹ 2.83
(ii)	Existing EPS of Rama Ltd.	₹ 2.50
	Increase in EPS of Rama Ltd (₹ 2.83 – ₹ 2.50)	₹ 0.33
	Existing EPS of Krishna Ltd.	₹ 3.50
	Decrease in EPS of Krishna Ltd. (₹ 3.50 – ₹ 2.83)	₹ 0.67
(iii)	P/E ratio of new firm (expected to remain same)	14 times
	New market price (14 × ₹ 2.83)	₹ 39.62
	Total No. of Shares	6,00,000
	Total market Capitalization (6,00,000 × ₹ 39.62)	₹ 2,37,72,000
	Existing market capitalization (₹ 70,00,000 + ₹ 1,40,00,000)	<u>₹ 2,10,00,000</u>
	Total gain	<u>₹ 27,72,000</u>

(iv)

	Rama Ltd.	Krishna Ltd	Total
No. of shares after merger	4,00,000	2,00,000	6,00,000
Market price	₹ 39.62	₹ 39.62	₹ 39.62
Total Mkt. Values	₹ 1,58,48,000	₹ 79,24,000	₹ 2,37,72,000
Existing Mkt. values	<u>₹ 1,40,00,000</u>	<u>₹ 70,00,000</u>	<u>₹ 2,10,00,000</u>
Gain to share holders	<u>₹ 18,48,000</u>	<u>₹ 9,24,000</u>	<u>₹ 27,72,000</u>
or ₹ 27,72,000 ÷ 3 = ₹ 9,24,000 to Krishna Ltd. and ₹ 18,48,000 to Rama Ltd. (in 2: 1 ratio)			

Question 22

T Ltd. and E Ltd. are in the same industry. The former is in negotiation for acquisition of the latter. Important information about the two companies as per their latest financial statements is given below:

	T Ltd.	E Ltd.
₹ 10 Equity shares outstanding	12 Lakhs	6 Lakhs
Debt:		
10% Debentures (₹ Lakhs)	580	--
12.5% Institutional Loan (₹ Lakhs)	--	240
Earning before interest, depreciation and tax (EBIDAT) (₹ Lakhs)	400.86	115.71
Market Price/share (₹)	220.00	110.00

13.37 Strategic Financial Management

T Ltd. plans to offer a price for E Ltd., business as a whole which will be 7 times EBIDAT reduced by outstanding debt, to be discharged by own shares at market price.

E Ltd. is planning to seek one share in T Ltd. for every 2 shares in E Ltd. based on the market price. Tax rate for the two companies may be assumed as 30%.

Calculate and show the following under both alternatives - T Ltd.'s offer and E Ltd.'s plan:

- (i) Net consideration payable.
- (ii) No. of shares to be issued by T Ltd.
- (iii) EPS of T Ltd. after acquisition.
- (iv) Expected market price per share of T Ltd. after acquisition.
- (v) State briefly the advantages to T Ltd. from the acquisition.

Calculations (except EPS) may be rounded off to 2 decimals in lakhs.

Answer

As per T Ltd.'s Offer

	₹ in lakhs
(i) Net Consideration Payable	
7 times EBIDAT, i.e. 7 x ₹ 115.71 lakh	809.97
Less: Debt	<u>240.00</u>
	<u>569.97</u>
(ii) No. of shares to be issued by T Ltd	
₹ 569.97 lakh/₹ 220 (rounded off) (Nos.)	2,59,000
(iii) EPS of T Ltd after acquisition	
Total EBIDT (₹ 400.86 lakh + ₹ 115.71 lakh)	516.57
Less: Interest (₹ 58 lakh + ₹ 30 lakh)	<u>88.00</u>
	428.57
Less: 30% Tax	<u>128.57</u>
Total earnings (NPAT)	<u>300.00</u>
Total no. of shares outstanding (12 lakh + 2.59 lakh)	14.59 lakh
EPS (₹ 300 lakh/ 14.59 lakh)	₹ 20.56

(iv) Expected Market Price:

	₹ in lakhs
Pre-acquisition P/E multiple:	
EBIDAT	400.86
Less: Interest $(580 \times \frac{10}{100})$	<u>58.00</u>
	342.86
Less: 30% Tax	<u>102.86</u>
	<u>240.00</u>
No. of shares (lakhs)	12.00
EPS	₹ 20.00
Hence, PE multiple $\frac{220}{20}$	11
Expected market price after acquisition (₹ 20.56 x 11)	₹ 226.16

As per E Ltd's Plan

	₹ in lakhs
(i) Net consideration payable	
6 lakhs shares x ₹ 110	660
(ii) No. of shares to be issued by T Ltd	
₹ 660 lakhs ÷ ₹ 220	3 lakh
(iii) EPS of T Ltd after Acquisition	
NPAT (as per earlier calculations)	300.00
Total no. of shares outstanding (12 lakhs + 3 lakhs)	15 lakh
Earning Per Share (EPS) ₹ 300 lakh/15 lakh	₹ 20.00
(iv) Expected Market Price (₹ 20 x 11)	220.00

(v) Advantages of Acquisition to T Ltd

Since the two companies are in the same industry, the following advantages could accrue:

- Synergy, cost reduction and operating efficiency.
- Better market share.
- Avoidance of competition.

13.39 Strategic Financial Management

Question 23

The following information is relating to Fortune India Ltd. having two division, viz. Pharma Division and Fast Moving Consumer Goods Division (FMCG Division). Paid up share capital of Fortune India Ltd. is consisting of 3,000 Lakhs equity shares of Re. 1 each. Fortune India Ltd. decided to de-merge Pharma Division as Fortune Pharma Ltd. w.e.f. 1.4.2009. Details of Fortune India Ltd. as on 31.3.2009 and of Fortune Pharma Ltd. as on 1.4.2009 are given below:

Particulars	Fortune Pharma Ltd.	Fortune India Ltd.
	₹	₹
Outside Liabilities		
Secured Loans	400 lakh	3,000 lakh
Unsecured Loans	2,400 lakh	800 lakh
Current Liabilities & Provisions	1,300 lakh	21,200 lakh
Assets		
Fixed Assets	7,740 lakh	20,400 lakh
Investments	7,600 lakh	12,300 lakh
Current Assets	8,800 lakh	30,200 lakh
Loans & Advances	900 lakh	7,300 lakh
Deferred tax/Misc. Expenses	60 lakh	(200) lakh

Board of Directors of the Company have decided to issue necessary equity shares of Fortune Pharma Ltd. of Re. 1 each, without any consideration to the shareholders of Fortune India Ltd. For that purpose following points are to be considered:

1. Transfer of Liabilities & Assets at Book value.
2. Estimated Profit for the year 2009-10 is ₹ 11,400 Lakh for Fortune India Ltd. & ₹ 1,470 lakhs for Fortune Pharma Ltd.
3. Estimated Market Price of Fortune Pharma Ltd. is ₹ 24.50 per share.
4. Average P/E Ratio of FMCG sector is 42 & Pharma sector is 25, which is to be expected for both the companies.

Calculate:

1. The Ratio in which shares of Fortune Pharma are to be issued to the shareholders of Fortune India Ltd.
2. Expected Market price of Fortune India Ltd.
3. Book Value per share of both the Companies immediately after Demerger.

Answer

Share holders' funds

(₹ Lakhs)

Particulars	Fortune India Ltd.	Fortune Pharma Ltd.	Fortune India (FMCG) Ltd.
Assets	70,000	25,100	44,900
Outside liabilities	<u>25,000</u>	<u>4,100</u>	<u>20,900</u>
Net worth	<u>45,000</u>	<u>21,000</u>	<u>24,000</u>

1. Calculation of Shares of Fortune Pharma Ltd. to be issued to shareholders of Fortune India Ltd.

	Fortune Pharma Ltd.
Estimated Profit (₹ in lakhs)	1,470
Estimated market price (₹)	24.5
Estimated P/E	25
Estimated EPS (₹)	0.98
No. of shares lakhs	1,500

Hence, Ratio is 1 share of Fortune Pharma Ltd. for 2 shares of Fortune India Ltd.

2. Expected market price of Fortune India Ltd.

	Fortune India (FMCG) Ltd.
Estimated Profit (₹ in lakhs)	11,400
No. of equity shares (₹ in lakhs)	3,000
Estimated EPS (₹)	3.8
Estimated P/E	42
Estimated market price (₹)	159.60

3. Book value per share

	Fortune Pharma Ltd.	Fortune India (FMCG) Ltd.
Net worth (₹ in lakhs)	21,000	24,000
No. of shares (₹ in lakhs)	1,500	3,000
Book value of shares	₹ 14	₹ 8

13.41 Strategic Financial Management

Question 24

Reliable Industries Ltd. (RIL) is considering a takeover of Sunflower Industries Ltd. (SIL). The particulars of 2 companies are given below:

Particulars	Reliable Industries Ltd	Sunflower Industries Ltd.
Earnings After Tax (EAT)	₹20,00,000	₹10,00,000
Equity shares O/s	10,00,000	10,00,000
Earnings per share (EPS)	2	1
PE Ratio (Times)	10	5

Required:

- What is the market value of each Company before merger?
- Assume that the management of RIL estimates that the shareholders of SIL will accept an offer of one share of RIL for four shares of SIL. If there are no synergic effects, what is the market value of the Post-merger RIL? What is the new price per share? Are the shareholders of RIL better or worse off than they were before the merger?
- Due to synergic effects, the management of RIL estimates that the earnings will increase by 20%. What are the new post-merger EPS and Price per share? Will the shareholders be better off or worse off than before the merger?

Answer

(i) Market value of Companies before Merger

Particulars	RIL	SIL
EPS	₹ 2	Re.1
P/E Ratio	10	5
Market Price Per Share	₹ 20	₹ 5
Equity Shares	10,00,000	10,00,000
Total Market Value	2,00,00,000	50,00,000

(ii) Post Merger Effects on RIL

	₹
Post merger earnings	30,00,000
Exchange Ratio (1:4)	
No. of equity shares o/s (10,00,000 + 2,50,000)	12,50,000
EPS: 30,00,000/12,50,000	2.4

PE Ratio	10
Market Value 10 x 2.4	24
Total Value (12,50,000 x 24)	3,00,00,000
Gains From Merger:	₹
Post-Merger Market Value of the Firm	3,00,00,000
Less: Pre-Merger Market Value	
RIL 2,00,00,000	
SIL <u>50,00,000</u>	<u>2,50,00,000</u>
Total gains from Merger	<u>50,00,000</u>

Apportionment of Gains between the Shareholders:

Particulars	RIL(₹)	SIL(₹)
Post Merger Market Value:		
10,00,000 x 24	2,40,00,000	--
2,50,000 x 24	-	60,00,000
Less: Pre-Merger Market Value	2,00,00,000	50,00,000
Gains from Merger:	40,00,000	10,00,000

Thus, the shareholders of both the companies (RIL + SIL) are better off than before

(iii) Post-Merger Earnings:

Increase in Earnings by 20%

New Earnings: ₹30,00,000 x (1+0.20) ₹36,00,000

No. of equity shares outstanding: 12,50,000

EPS (₹ 36,00,000/12,50,000) ₹2.88

PE Ratio 10

Market Price Per Share:

= ₹2.88 x 10 = ₹28.80

\ Shareholders will be better-off than before the merger situation.

Question 25

AFC Ltd. wishes to acquire BCD Ltd. The shares issued by the two companies are 10,00,000 and 5,00,000 respectively:

(i) Calculate the increase in the total value of BCD Ltd. resulting from the acquisition

13.43 Strategic Financial Management

on the basis of the following conditions:

Current expected growth rate of BCD Ltd. 7%

Expected growth rate under control of AFC Ltd., (without any additional capital investment and without any change in risk of operations) 8%

Current Market price per share of AFC Ltd. ₹ 100

Current Market price per share of BCD Ltd. ₹ 20

Current Dividend per share of BCD Ltd. Re. 0.60

- (ii) On the basis of aforesaid conditions calculate the gain or loss to shareholders of both the companies, if AFC Ltd. were to offer one of its shares for every four shares of BCD Ltd.
- (iii) Calculate the gain to the shareholders of both the Companies, if AFC Ltd. pays ₹22 for each share of BCD Ltd., assuming the P/E Ratio of AFC Ltd. does not change after the merger. EPS of AFC Ltd. is ₹8 and that of BCD is ₹2.50. It is assumed that AFC Ltd. invests its cash to earn 10%.

Answer

- (i) For BCD Ltd., before acquisition

The cost of capital of BCD Ltd. may be calculated by using the following formula:

$$\frac{\text{Dividend}}{\text{Price}} + \text{Growth\%}$$

$$\text{Cost of Capital i.e., } K_e = (0.60/20) + 0.07 = 0.10$$

After acquisition g (i.e. growth) becomes 0.08

$$\text{Therefore, price per share after acquisition} = 0.60 / (0.10 - 0.08) = ₹30$$

$$\text{The increase in value therefore is} = ₹(30 - 20) \times 5,00,000 = ₹50,00,000/-$$

- (ii) To share holders of BCD Ltd. the immediate gain is ₹100 – ₹20x4 = ₹20 per share

The gain can be higher if price of shares of AFC Ltd. rise following merger which they should undertake.

To AFC Ltd. shareholders	(₹ (In lakhs))
Value of Company now	1,000
Value of BCD Ltd.	150
	1,150

No. of shares	11.25
\ Value per share	1150/11.25= ₹102.22

Gain to shareholders of BCD Ltd. = ₹102.22 – ₹(4 x 20) = ₹22.22

Gain to shareholders of AFC Ltd. = ₹102.22 – ₹100.00 = ₹2.22

(iii) Gain to shareholders of AFC Ltd:-

Earnings of BCD Ltd. (5,00,000 x 2.50)	₹12,50,000/-
Less: Loss of earning in cash (5,00,000 x ₹ 22 x 0.10)	<u>₹11,00,000/-</u>
Net Earning	<u>₹ 1,50,000/-</u>
Number of shares	10,00,000
Net increase in earning per share	0.15

P/E ratio of AFC Ltd. = 100/8 = 12.50

Therefore, Gain per share of shareholders of AFC Ltd.

= 0.15 x 12.50 = ₹1.88

Gain to the shareholders of BCD Ltd. ₹ (22-20) = ₹2/- per share

Question 26

AB Ltd., is planning to acquire and absorb the running business of XY Ltd. The valuation is to be based on the recommendation of merchant bankers and the consideration is to be discharged in the form of equity shares to be issued by AB Ltd. As on 31.3.2006, the paid up capital of AB Ltd. consists of 80 lakhs shares of ₹10 each. The highest and the lowest market quotation during the last 6 months were ₹570 and ₹430. For the purpose of the exchange, the price per share is to be reckoned as the average of the highest and lowest market price during the last 6 months ended on 31.3.06.

XY Ltd.'s Balance Sheet as at 31.3.2006 is summarised below:

	₹ lakhs
Sources	
Share Capital	
20 lakhs equity shares of ₹10 each fully paid	200
10 lakhs equity shares of ₹10 each, ₹5 paid	50
Loans	100
Total	350
Uses	
Fixed Assets (Net)	150
Net Current Assets	200
	350

13.45 Strategic Financial Management

An independent firm of merchant bankers engaged for the negotiation, have produced the following estimates of cash flows from the business of XY Ltd.:

Year ended	By way of	₹ lakhs
31.3.07	after tax earnings for equity	105
31.3.08	do	120
31.3.09	Do	125
31.3.10	Do	120
31.3.11	Do	100
	terminal value estimate	200

It is the recommendation of the merchant banker that the business of XY Ltd. may be valued on the basis of the average of (i) Aggregate of discounted cash flows at 8% and (ii) Net assets value. Present value factors at 8% for years

1-5:	0.93	0.86	0.79	0.74	0.68
------	------	------	------	------	------

You are required to:

- (i) Calculate the total value of the business of XY Ltd.
- (ii) The number of shares to be issued by AB Ltd.; and
- (iii) The basis of allocation of the shares among the shareholders of XY Ltd.

Answer

Price/share of AB Ltd. for determination of number of shares to be issued:

$$(\text{₹}570 + \text{₹}430)/2 \quad \text{₹} \quad 500$$

Value of XY Ltd based on future cash flow capitalization

$$(105 \times 0.93) + (120 \times 0.86) + (125 \times 0.79) + (120 \times 0.74) + (200 \times 0.68) \quad \text{₹ lakhs} \quad 592.40$$

$$\text{Value of XY Ltd based on net assets} \quad \text{₹ lakhs} \quad 250.00$$

$$\text{Average value } (592.40 + 250)/2 \quad 421.20$$

$$\text{No. of shares in AB Ltd to be issued } \text{₹ } 4,21,20,000 / 500 \quad \text{Nos.} \quad 84240$$

Basis of allocation of shares

$$\text{Fully paid equivalent shares in XY Ltd. } (20+5) \text{ lakhs} \quad 2500000$$

$$\text{Distribution to fully paid shareholders } 84240 \times 20/25 \quad 67392$$

$$\text{Distribution to partly paid shareholders } 84240 - 67392 \quad 16848$$

Question 27

BA Ltd. and DA Ltd. both the companies operate in the same industry. The Financial statements of both the companies for the current financial year are as follows:

Balance Sheet

Particulars	BA Ltd. (₹)	DA Ltd. (₹)
Current Assets	14,00,000	10,00,000
Fixed Assets (Net)	<u>10,00,000</u>	<u>5,00,000</u>
Total (₹)	<u>24,00,000</u>	<u>15,00,000</u>
Equity capital (₹10 each)	10,00,000	8,00,000
Retained earnings	2,00,000	--
14% long-term debt	5,00,000	3,00,00
Current liabilities	<u>7,00,000</u>	<u>4,00,000</u>
Total (₹)	<u>24,00,000</u>	<u>15,00,000</u>

Income Statement

	BA Ltd. (₹)	DA Ltd. (₹)
Net Sales	34,50,000	17,00,000
Cost of Goods sold	<u>27,60,000</u>	<u>13,60,000</u>
Gross profit	6,90,000	3,40,000
Operating expenses	2,00,000	1,00,000
Interest	70,000	42,000
Earnings before taxes	4,20,000	1,98,00
Taxes @ 50%	<u>2,10,000</u>	<u>99,000</u>
Earnings after taxes (EAT)	<u>2,10,000</u>	<u>99,000</u>
<i>Additional Information :</i>		
No. of Equity shares	1,00,000	80,000
Dividend payment ratio (D/P)	40%	60%
Market price per share	₹40	₹15

13.47 Strategic Financial Management

Assume that both companies are in the process of negotiating a merger through an exchange of equity shares. You have been asked to assist in establishing equitable exchange terms and are required to:

- (i) Decompose the share price of both the companies into EPS and P/E components; and also segregate their EPS figures into Return on Equity (ROE) and book value/intrinsic value per share components.
- (ii) Estimate future EPS growth rates for each company.
- (iii) Based on expected operating synergies BA Ltd. estimates that the intrinsic value of DA's equity share would be ₹20 per share on its acquisition. You are required to develop a range of justifiable equity share exchange ratios that can be offered by BA Ltd. to the shareholders of DA Ltd. Based on your analysis in part (i) and (ii), would you expect the negotiated terms to be closer to the upper, or the lower exchange ratio limits and why?
- (iv) Calculate the post-merger EPS based on an exchange ratio of 0.4: 1 being offered by BA Ltd. and indicate the immediate EPS accretion or dilution, if any, that will occur for each group of shareholders.
- (v) Based on a 0.4: 1 exchange ratio and assuming that BA Ltd.'s pre-merger P/E ratio will continue after the merger, estimate the post-merger market price. Also show the resulting accretion or dilution in pre-merger market prices.

Answer

Market price per share (MPS) = EPS X P/E ratio or P/E ratio = MPS/EPS

(i) Determination of EPS, P/E ratio, ROE and BVPS of BA Ltd. and DA Ltd.

		BA Ltd.	DA Ltd.
Earnings After Tax	(EAT)	₹ 2,10,000	₹ 99,000
No. of Shares	(N)	100000	80000
EPS	(EAT/N)	₹ 2.10	₹ 1.2375
Market price per share	(MPS)	40	15
P/E Ratio	(MPS/EPS)	19.05	12.12
Equity Funds	(EF)	₹ 12,00,000	₹ 8,00,000
BVPS	(EF/N)	12	10
ROE	(EAT/EF) × 100	17.50%	12.37%

(ii) Estimation of growth rates in EPS for BA Ltd. and DA Ltd.

Retention Ratio	(1-D/P ratio)	0.6	0.4
Growth Rate	(ROE × Retention Ratio)	10.50%	4.95%

(iii) Justifiable equity shares exchange ratio

- (a) Intrinsic value based = ₹20 / ₹40 = 0.5:1 (upper limit)
- (b) Market price based = MPS_{DA}/MPS_{BA} = ₹15 / ₹40 = 0.375:1 (lower limit)

Since, BA Ltd. has a higher EPS, ROE, P/E ratio and even higher EPS growth expectations, the negotiable terms would be expected to be closer to the lower limit, based on the existing share prices.

(iv) Calculation of post merger EPS and its effects

Particulars			BA Ltd.	DA Ltd.	Combined
EAT	(₹)	(i)	2,10,000	99,000	3,09,000
Share outstanding		(ii)	100000	80000	132000*
EPS	(₹)	(i) / (ii)	2.1	1.2375	2.341
EPS Accretion (Dilution)	(Re.)		0.241	(0.301***)	

(v) Estimation of Post merger Market price and other effects

Particulars			BA Ltd.	DA Ltd.	Combined
EPS	(₹)	(i)	2.1	1.2375	2.341
P/E Ratio		(ii)	19.05	12.12	19.05
MPS	(₹)	(i) / (ii)	40	15	44.6
MPS Accretion	(₹)		4.6	2.84***	

* Shares outstanding (combined) = 100000 shares + (.40 × 80000) = 132000 shares

** EPS claim per old share = ₹2.34 × 0.4 = Re.0.936

EPS dilution = ₹1.2375 – Re.0.936 = Re.0.3015

***S claim per old share (₹44.60 × 0.4) = ₹ 17.84

Less: MPS per old share = ₹ 15.00

₹ 2.84

Question 28

A valuation done of an established company by a well-known analyst has estimated a value of ₹ 500 lakhs, based on the expected free cash flow for next year of ₹ 20 lakhs and an expected growth rate of 5%.

13.49 Strategic Financial Management

While going through the valuation procedure, you found that the analyst has made the mistake of using the book values of debt and equity in his calculation. While you do not know the book value weights he used, you have been provided with the following information:

- (i) Company has a cost of equity of 12%,
- (ii) After tax cost of debt is 6%,
- (iii) The market value of equity is three times the book value of equity, while the market value of debt is equal to the book value of debt.

You are required to estimate the correct value of the company.

Answer

Cost of capital by applying Free Cash Flow to Firm (FCFF) Model is as follows:-

$$\text{Value of Firm} = V_0 = \frac{\text{FCFF}_1}{K_c - g_n}$$

Where –

FCFF_1 = Expected FCFF in the year 1

K_c = Cost of capital

g_n = Growth rate forever

Thus, ₹ 500 lakhs = ₹ 20 lakhs / ($K_c - g$)

Since $g = 5\%$, then $K_c = 9\%$

Now, let X be the weight of debt and given cost of equity = 12% and cost of debt = 6%, then $12\% (1 - X) + 6\% X = 9\%$

Hence, $X = 0.50$, so book value weight for debt was 50%

\ Correct weight should be 75% of equity and 25% of debt.

\ Cost of capital = $K_c = 12\% (0.75) + 6\% (0.25) = 10.50\%$

and correct firm's value = ₹ 20 lakhs / ($0.105 - 0.05$) = ₹ 363.64 lakhs.

Question 29

Following informations are available in respect of XYZ Ltd. which is expected to grow at a higher rate for 4 years after which growth rate will stabilize at a lower level:

Base year information:

Revenue	- ₹ 2,000 crores
EBIT	- ₹ 300 crores
Capital expenditure	- ₹ 280 crores
Depreciation	- ₹ 200 crores

Information for high growth and stable growth period are as follows:

	High Growth	Stable Growth
Growth in Revenue & EBIT	20%	10%
Growth in capital expenditure and depreciation	20%	Capital expenditure are offset by depreciation
Risk free rate	10%	9%
Equity beta	1.15	1
Market risk premium	6%	5%
Pre tax cost of debt	13%	12.86%
Debt equity ratio	1 : 1	2 : 3

For all time, working capital is 25% of revenue and corporate tax rate is 30%.

What is the value of the firm?

Answer

High growth phase :

$$k_e = 0.10 + 1.15 \times 0.06 = 0.169 \text{ or } 16.9\%.$$

$$k_d = 0.13 \times (1 - 0.3) = 0.091 \text{ or } 9.1\%.$$

$$\text{Cost of capital} = 0.5 \times 0.169 + 0.5 \times 0.091 = 0.13 \text{ or } 13\%.$$

Stable growth phase :

$$k_e = 0.09 + 1.0 \times 0.05 = 0.14 \text{ or } 14\%.$$

$$k_d = 0.1286 \times (1 - 0.3) = 0.09 \text{ or } 9\%.$$

$$\text{Cost of capital} = 0.6 \times 0.14 + 0.4 \times 0.09 = 0.12 \text{ or } 12\%.$$

Determination of forecasted Free Cash Flow of the Firm (FCFF)

(₹ in crores)

	Yr. 1	Yr. 2	Yr 3	Yr. 4	Terminal Year
Revenue	2,400	2,880	3,456	4,147.20	4,561.92
EBIT	360	432	518.40	622.08	684.29
EAT	252	302.40	362.88	435.46	479.00
Capital Expenditure	96	115.20	138.24	165.89	-
Less Depreciation					
Δ Working Capital	<u>100.00</u>	<u>120.00</u>	<u>144.00</u>	<u>172.80</u>	<u>103.68</u>
Free Cash Flow (FCF)	<u>56.00</u>	<u>67.20</u>	<u>80.64</u>	<u>96.77</u>	<u>375.32</u>

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Alternatively it can also be computed as follows:

(₹ in crores)

	Yr. 1	Yr. 2	Yr 3	Yr. 4	Terminal Year
Revenue	2,400	2,880	3,456	4,147.20	4,561.92
EBIT	360	432	518.40	622.08	684.29
EAT	252	302.40	362.88	435.46	479.00
Add: Depreciation	<u>240</u>	<u>288</u>	<u>345.60</u>	<u>414.72</u>	<u>456.19</u>
	492	590.40	708.48	850.18	935.19
Less: Capital Exp.	336	403.20	483.84	580.61	456.19
D WC	<u>100.00</u>	<u>120.00</u>	<u>144.00</u>	<u>172.80</u>	<u>103.68</u>
	<u>56.00</u>	<u>67.20</u>	<u>80.64</u>	<u>96.77</u>	<u>375.32</u>

Present Value (PV) of FCFF during the explicit forecast period is:

FCFF (₹ in crores)	PVF @ 13%	PV (₹ in crores)
56.00	0.885	49.56
67.20	0.783	52.62
80.64	0.693	55.88
96.77	0.613	59.32
		₹ 217.38

Terminal Value of Cash Flow

$$\frac{375.32}{0.12 - 0.09} = ₹ 12,510.67 \text{ Crores}$$

PV of the terminal, value is:

$$₹ 12,510.67 \text{ Crores} \times \frac{1}{(1.13)^4} = ₹ 12,510.67 \text{ Crores} \times 0.613318 = ₹ 7,673.02 \text{ Crore}$$

The value of the firm is :

$$₹ 217.38 \text{ Crores} + ₹ 7,673.02 \text{ Crores} = ₹ 7,890.40 \text{ Crores}$$

Question 30

ABC, a large business house is planning to sell its wholly owned subsidiary KLM. Another large business entity XYZ has expressed its interest in making a bid for KLM. XYZ expects that after acquisition the annual earning of KLM will increase by 10%.

Following information, ignoring any potential synergistic benefits arising out of possible acquisitions, are available:

- (i) Profit after tax for KLM for the financial year which has just ended is estimated to be ₹10 crore.
- (ii) KLM's after tax profit has an increasing trend of 7% each year and the same is expected to continue.
- (iii) Estimated post tax market return is 10% and risk free rate is 4%. These rates are expected to continue.
- (iv) Corporate tax rate is 30%.

	XYZ	ABC	Proxy entity for KLM in the same line of business
No. of shares	100 lakhs	80 lakhs	--
Current share price	₹ 287	₹ 375	--
Dividend pay out	40%	50%	50%
Debt : Equity at market values	1 : 2	1 : 3	1 : 4
P/E ratio	10	13	12
Equity beta	1	1.1	1.1

Assume gearing level of KLM to be the same as for ABC and a debt beta of zero.

You are required to calculate:

- (a) Appropriate cost of equity for KLM based on the data available for the proxy entity.
- (b) A range of values for KLM both before and after any potential synergistic benefits to XYZ of the acquisition.

Answer

a. $b_{\text{equity ungereared for the proxy company}} = 1.1 \times 4 / [4 + (1 - 0.3)] = 0.9362$

$$0.9362 = b_{\text{equity geared}} \times 3 / [3 + (1 - 0.3)]$$

$$b_{\text{equity geared}} = 1.1546$$

$$\text{Cost of equity} = 0.04 + 1.1546 \times (0.1 - 0.04) = 10.93\%$$

b. P/E valuation

(Based on earning of ₹ 10 Crore)

Using proxy
Entity's P/E

Using XYZ's
P/E

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Pre synergistic value	12 X ₹ 10 Crore = ₹ 120 Crore	10 X ₹ 10 Crore = ₹ 100 Crore
Post synergistic value	12 X ₹ 10 Crore X 1.1 = ₹ 132 Crore	10 X ₹ 10 Crore X 1.1 = ₹ 110 Crore

Divided valuation model

	Based on 50% payout	Based on 40% payout
Pre synergistic value	$\frac{0.5 \times 10 \times 1.07}{0.1093 - 0.07}$ = ₹ 136.13 Crore	$\frac{0.4 \times 10 \times 1.07}{0.1093 - 0.07}$ = ₹ 108.91 Crore
Post synergistic value	$\frac{0.5 \times 10 \times 1.1 \times 1.07}{0.1093 - 0.07}$ = ₹ 149.75 Crore	$\frac{0.4 \times 10 \times 1.1 \times 1.07}{0.1093 - 0.07}$ = ₹ 119.79 Crore

Market Price

Although no information is available about the value of KLM, it may be possible to calculate a market value based on proportion of earnings of ABC that is generated by KLM.

Market value of ABC = 80 Lakh Shares X ₹ 375 = ₹ 300 Crore

Post Tax earnings of ABC = ₹ 300/13 = ₹ 23.08 Crore

If market value of ABC is allocated to KLM in the proportion of relative earning of KLM to that of ABC, KLM would have a market value of ₹ 300 crore X [10/23.08] = ₹ 130 Crore.

KLM's Post Tax earning = ₹ 10 Crore.

If ABC's P/E ratio is applied to it, the market value of KLM becomes ₹ 10 Crore X 13 = ₹ 130 Crore.

Therefore, it assumes that KLM has the same P/E ratio as that of ABC.

Range of valuation

Pre synergistic	₹ 100 Crore	₹ 136.13 Crore
Post synergistic	₹ 110 Crore	₹ 149.75 Crore

EXERCISES

Question 1

Fuller Plc. is intending to acquire Felicy Plc. by merger and the following information is available in respect of the companies:

	Fuller Plc.	Felicy Plc.
Number of equity shares	1,00,000	60,000
Earnings after tax (£)	5,00,000	1,80,000
Market value per share (£)	42	28

Required:

- (i) What is the present EPS of both the companies?
- (ii) If the proposed merger takes place, what would be the new earning per share for Fuller Plc.? Assume that the merger takes place by exchange of equity shares and the exchange ratio is based on the current market price.

(Answer: (i) Fuller Plc. = £ 5 and Felicy Plc.= £ 3 (ii) £ 4.86)

Question 2

Cool-cool Ltd. makes thermal clothing for winter sports and outdoor work, and is considering acquiring Sking Shell Ltd. which manufactures and sells ski clothing. Sking Shell is about one quarter of Frozen's size and manufactures its entire product line in a small rented factory on a mountaintop in Manali. It costs about Rs.10,00,000 a year in overhead to operate in the factory. Cool-cool Ltd. produces its output in a less popular in North but more popular north-east locations. Its factory has at least 50% excess capacity. Cool-cool's plan is to acquire Sking Shell, and combine production operations in its north-eastern factory, but otherwise run the companies separately.

Sking Shell's beta is 2.0, Treasury bills currently yield 5% and the Nifty Index is yielding 9%. The corporate income tax rate for both firms is 40%. Because Sking Shell will no longer be maintaining its own production facilities, it can be assumed that only a minimal amount of cash will have to be reinvested to keep its equipment current and for future growth. This amount is estimated at ₹ 1,00,000 per year. Selected financial information for Sking Shell is as follows:

Revenue	₹ 1,25,00,000
EAT	₹ 13,00,000
Depreciation	₹ 6,00,000

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- (a) Calculate the appropriate discount rate for evaluating the Sking Shell acquisition.
- (b) Determine the annual cash flow expected by Cool-cool Ltd. from Sking Shell if the acquisition is made (don't forget to include the synergy).
- (c) Calculate the value of the acquisition to Cool-cool Ltd. assuming the benefits last for (1) five years, (2) 10 years, and (3) 15 years.
- (d) Sking Shell has 2,50,000 shares of stock outstanding. Calculate the maximum price Cool-cool Ltd. should be willing to pay per share to acquire the firm under the three assumptions in part c.
- (e) If Cool-cool Ltd. is willing to assume the benefits of the Sking Shell acquisition will last indefinitely but not grow, what should it be willing to pay per share?

(Answer: (a) 13% (b) ₹ 2,400,000 (c) (1) Rs.8,441,000 (2) Rs.13,023,000 (3) Rs.15,510,000 (d) (1) ₹ 33.76 (2) ₹ 52.09 (3) ₹ 62.04 (e) Rs.73.85)

Question 3

In above question , assume that the cash flow from the Sking Shell acquisition grows at 10% from its initial value for one year and then grows at 5% indefinitely (starting in the third year). Calculate the value of the firm and the implied stock price under these conditions. Use a terminal value at the beginning of the period of 5% growth. What price premium is implied in dollars and as a percent of market price if Sking Shell's stock is currently selling at ₹ 62?

(Answer: 102.10% of market price)