

Question Paper

Security Analysis – II (212) : July 2005

Section D: Case Study (50 Marks)

This section consists of questions with serial number 1 - 5.
Answer all questions.
Marks are indicated against each question.
Do not spend more than 80 - 90 minutes on Section D.

Case Study

Read the case carefully and answer the following questions:

1. Perform Michael Porter analysis of the Indian car industry.
(10 marks) < Answer >
2. Based on the financial statements provided in Annexure I, perform ratio analysis for Hind Motors Ltd for the past 4 years and comment on the same.
(10 marks) < Answer >
3. From the data provided in Annexure II, you are **required** to
 - a. Determine the probability that the return from the stock of Hind Motors Ltd would be between zero percent and 5 percent during April 2005.
 - b. Determine the characteristic line for Hind Motors Ltd.(6 + 8 = 14 marks) < Answer >
4. The EPS of Hind Motors Ltd is expected to grow at 8% for the next 3 years, and then grow at 12% for two years, before reaching a constant growth rate of 5%. The payout ratio will be 30% during the next 3 years and it will rise to 40% for 4th and 5th year before achieving a constant payout of 25%. Determine the required rate of return of Hind Motors Ltd shareholders based on the price of Hind Motors Ltd shares on August 2005 using the Dividend Discount Model. (Price on 31, August 2005 is Rs.281.50)
(6 marks) < Answer >
5.
 - a. Comment on whether the stock should be bought, sold or held at points A, B, C, D and E based on the share price charts given in Annexure III.
 - b. What are the important principles that are to be considered while observing a crossover of moving average line over price line?(5 + 5 = 10 marks) < Answer >

Indian Car Industry

India had its date with this wonderful vehicle first time in 1898. Then for the next fifty years, cars were imported to satisfy domestic demand. Between 1910 and 20's the automobile industry made a humble beginning by setting up assembly plants in Mumbai, Calcutta and Chennai. The import/assembly of vehicles grew consistently after the 1920's, crossing the 30,000 mark in 1930. In 1946, Premier Automobile Ltd (PAL) earned the distinction of manufacturing the first car in the country by assembling 'Dodge DeSoto' and 'Plymouth' cars at its Kurla plant. Hindustan Motors (HM), which started as a manufacturer of auto components graduated to manufacture cars in 1949.

In the early 80's, a series of liberal policy changes were announced marking a turning point for the automobile industry. The GOI entered the car business, with a 74% stake in Maruti Udyog Ltd (MUL), the joint venture with Suzuki Motors Ltd of Japan. The very face of the industry was changed for ever in 1983 with the entry of public sector Maruti Udyog in a joint venture with the Suzuki Corporation of Japan. Car sales grew by 42 per cent yoy in 1985 after Maruti 800 was launched. Thanks to MUL car sales registered a CAGR of 18.6 per cent i.e. from 1981 to 1990.

In 1985, the GOI announced its famous broad banding policy which gave new licenses to broad groups of automotive products like two and four-wheeled vehicles. Though a liberal move, the licensing system was still very much intact. MUL introduced 'Maruti 800' in 1983 providing a complete facelift to the Indian car industry. The car was launched as a "peoples car" with a price tag of Rs40,000. This changed the industry's profile dramatically.

Industry Structure

The Indian car industry can be classified, based on the price of the car, into the small car or the economy segment (up to Rs0.25mn), mid-size segment (Rs0.25-0.45mn), luxury car segment (Rs0.45-1mn) and super luxury car segment (above Rs1mn).

The models in the car market can be fitted to different segments as given below:

Category	Models
Economy segment (up to Rs0.25mn)	Maruti Omni, Maruti 800, Padmini
Mid-size segment (Rs0.25-0.45mn),	Premier 118NE, Ambassador Nova, Fiat Uno, Zen, Hyundai Santro, Daewoo Matiz, Tata Indica, Maruti 1000, Contessa
Luxury car segment (Rs0.45-1mn)	Peugeot 309, Tata Estate, Tata Sierra, Maruti Esteem, Ceilo Executive, Honda City, Mitsubishi Lancer, Ford Ikon, Opel Astra, Fiat Siena, Opel Corsa, Daewoo Nexia, Hyundai Accent
Super luxury segment (Above Rs1mn).	Mercedes Benz and other imported models

The demand for passenger cars can be segmented on the basis of the user segment as those bought by taxi operators, government/non government institutions, individual buyers etc. A major portion of the demand in India accrues mainly from personal vehicle owners.

Government Policy

After liberalization and with the consequent opening up of the auto sector in 1992-93, the license raj ceased to exist. The policy of broad banding capacities in the eighties led to increased utilization of capacity for four-wheelers in the industry.

The liberal policy on foreign participation through technical and financial collaboration in early eighties led to substantial product upgradation and introduction of new models. But it was alleged that the policy was discriminatory in favor of MUL, while others like Telco, PAL, HM were denied permission to produce cars in collaboration with Japanese companies.

The GOI controls the car sector by way of framing policies on depreciation norms, import duty on cars and parts used in it, petrol prices and import duty of steel. The GOI policy will continue to influence the supply of cars. The different norms with great significance to the sector are import duty on CKD/ SKD kits, auto components, foreign exchange and neutralization schedule for new ventures etc.

Import Policy: The import of passenger cars and other automotive vehicles is restricted and an import licence is required for these items. Import of capital goods and automotive components/parts are placed under Open General Licence (OGL) and hence, no Government approval is required. SKD/CKD Imports: Some of the joint ventures in the passenger car sector envisage initial import of cars in SKD/CKD kits. Import of cars in SKD/CKD kits require a licence from the Directorate General of Foreign Trade (DGFT)

Excise Duty: The perception of a car as a luxury item leads to heavy excise duty on cars. The excise duty doubled from 25% in FY87 to 55% in FY91. Till 1987, the GOI followed a discriminatory policy so as to charge lower duty on fuel efficient car with engine capacity of less than 1000cc. This helped MUL to price its car at a lower price in comparison to others. But with lobbying from PAL and HM government withdrew the provision in 1987.

But with the onset of the liberalization process in the early nineties, there has been continued rationalisation of excise duty in respect of automobiles. In 1997-98 there was a duty of 40 per cent on motor vehicles, designed for transport of not more than six people (excluding the driver). On vehicles designed for transport of more than six people, but not more than 12 people, the duty was 25 per cent. In the case of public transport vehicles and vehicles for transport of goods, the duty was fixed at 15 per cent. The duty on two-wheelers varies from 15 per cent to 20 per cent depending upon engine capacity,. Excise duty on auto components has been reduced from levels of 20 and 15 per cent to 18 and 13 per cent. Excise duty on electrically-operated vehicles has been reduced from 10 to 8 per cent and bodies of motor vehicles from 20 to 18 per cent.

The car industry had been asking for reduction in excise duty so as to reduce the end prices of cars to customers and increase the sluggish demand. With continuation of liberalisation and shift in the perception (of car being a luxury product) may lead to reduction in duties over a period of two to three years. This will reduce the prices of cars leading to further boost in demand.

The body panel and engine constitute a major portion of the total cost of car manufacture. A typical cost structure for car is as given below:

Parts/assembly	% of total cost
Glass	5
Brakes/wheels/tyres	6
Interiors	7
Transmission system	7
Ignition/exhaust system	8
Steering/suspension	9
Comfort fittings	11
Engine	16
Body	18
Others	13

Car manufacturing is basically assembly of components procured from ancillaries or auto component manufacturers. Nearly 80% of auto components are outsourced by the car manufacturers. This helps in reducing the capital cost needed to setup a car manufacturing plant.

Therefore, auto ancillaries play a key role in maintaining the quality and price of the product. But until the entry of MUL in the Indian car industry, vendor development was hardly seen as a part of automobile manufacturing in the country. With the setting up of auto component manufacturing facilities by Indian promoters, in collaboration with Japanese players for supply to MUL, the country was first introduced to the concept of out sourcing.

With the new entrants planning to start manufacturing facilities with a small capacity base in the country, the role of auto component players will substantially become important over the years.

Demand

The demand for cars in the past was supply driven as demand did not match supply. This led to high premium and long waiting periods for the cars. But change in government policies coupled with aggressive capacity additions and upgradation of models by MUL in the early nineties led to increase in supply and subsequently reduced the waiting periods for economy cars.

The demand for cars is dependent on a number of factors. The key variables are per capita income, introduction of new models, availability & cost of car financing schemes, price of cars, incidence of duties and taxes, depreciation norms, fuel cost and its subsidization, public transport facilities etc. The first four factors viz, increase in per capita income, introduction of new models, availability & cost of car financing have positive relationship with the demand whereas others have an inverse relationship with demand for cars.

Supply

The supply of cars in Indian industry till 1991, was dependent upon the production capacity of individual players. The production of cars has increased from 42,475 units to 181,420 units from 1981 to 1991 respectively. The growth in production of cars has varied in the last three decades from just 1% in 1970-80 to 21% in 1980-90 and above 15% in 1991- 96. The table below gives the production numbers of passenger cars in the past few years:

Car	94-95	95-96	96-97	97-98	98-99	99-2000	2000-01
Production	207,658	264,468	348,146	407,539	401,002	390,355	577,243
Growth %yoy	27.2	27.4	31.6	17.1	(1.6)	(2.7)	32.4

Source: SIAM (excludes the figures related to Daewoo and Honda Sael)

The major increase in production of cars in the 80's was due to the entry of MUL in 1983, which helped increase car production by 20,000 to 30,000 cars per annum till the early nineties.

With the entry of MUL, the face of the passenger car industry changed forever. Existing producers who had

operated in a protected, high margin environment faced the prospect of not just diminishing market share, but a shift in focus from producing vehicles to selling them. However, MUL made use of the opportunity open to its technologically superior product and increased its capacity from 100,000 cars in 1990-91 to 240,000 cars in 1995-96 and 350,000 cars in 1998-99.

Export

The passenger car exports in the eighties and early nineties had been very negligible as the companies were facing capacity constraints, that was not even sufficient to supply to the domestic market. The poor quality of cars compared to international standards led to poor quantity of exports from the country.

In 1985, MUL started exporting cars to neutralize the impact of foreign exchange outflow. The exports of MUL increased from 100 cars in 1987 to 6,000 cars in 1990. The exports witnessed further momentum in the nineties to reach a volume of 37,161 in 1997. But from 1998 onwards, a southward trend was witnessed with declining sales of 20% yoy to 29,747 vehicles. The same continued in 1999 with a further drop of 14%yoy to 25,464 units. 2000 too saw lackluster exports with a 9% fall in export sales which touched 23,271 units. The reason for sharp drop in car exports has been a drop in MUL exports, which now accounts for 90% of the country's total exports.

However, exports are expected to increase in the near future as for the first time, new entrants like Daewoo, Hyundai, Honda S1000, GM and Ford are busy investigating options in the world markets. Daewoo has already made a beginning by exporting its small car Matiz to Italy. Also GM has commenced exports to Nepal and is further considering Sri Lanka as a potential export market. Further Ford is scheduled to commence exports by the end of the third quarter of the current fiscal. In the longer run, as the industry matures, exports should increase as manufacturers strive to attain economies of scale, which will not be possible given the relatively small size of the domestic market.

The industry will witness substantial over capacity in the next few years unless there is a substantial spurt in sales. If not, Low capacity utilization will lead to an inevitable marketing war between the car manufacturers which is most likely to lead to a shake out which will see some of today's major players withdrawing from particular segments in the coming years. Consumer will however continue to remain the KING. The prospective buyer will be the main beneficiary of the marketing war in the industry not only in terms of prices but also better technology. There is always a fear of the shakeout eating into your favourite brand you own, for example discontinuation of a model.

Hind Motors Ltd. (HML)

Hind Motors Ltd (HML), incorporated in 1945, initially manufactured steam locomotives and progressively widened its product range to cover heavy commercial vehicles (HCVs) and light commercial vehicles (LCVs).

HML set up its first plant at Jamshedpur, in 1945. The Pune plant, manufacturing LCVs and cars was set up at Pune in 1966. The Lucknow plant is the most recent plant, having been set up in 1992. The plant makes LCVs and medium commercial vehicles (MCVs). With a production capacity of 30,000 units, it accounted for 9 per cent of Hind Engineering's production of commercial and passenger vehicles (excluding Cadina) in 1999-2000. HML has a total manufacturing capacity of 2,50,000 units for vehicles other than Cadina, the passenger car by HML.

HML has a domestic market share of 68% in the MCV/HCV segment, 64% in the LCV segment and 32% in the multi-utility segment. Apart from commercial vehicles, which range from 1 tonne to 35 tonnes GVW (Gross Vehicle Weight), HML automobile products includes passenger vehicles and a multi-utility vehicle. HML indigenously developed small car Cadina was launched in December 1998. Prospects of HML's Cadina rests on how effectively it faces competition from Hyundai, Daewoo and Maruti in the car segment. In the Utility Vehicle (UV) segment, it has faced some tough competition from M&M's 'Armada'. HML's product development capabilities, scales and low import content give it cost advantages and its wide distribution network gives it a competitive advantage.

HML has been exporting its products since 1969 and currently exports about a tenth of its output.

The company intends that the exports should account for 20% of its automobiles sales.

HML is a JV partner in Hind Cummins Limited (engines), Mercedes Benz India Limited -MBIL (where its equity has been diluted to 14%), Hind Holset Limited (turbochargers) and Concorde Motors Limited.

In May 2000, the company rolled the petrol versions of Cadina, Cadina2000, to meet the stringent Euro-II emission norms that came into force in the National Capital Region from April 1, 2000.

The company has launched the petrol variant fitted with multi-point fuel injection system and another fully loaded petrol version to meet the demand in the NCR as only Euro-II compliant passenger cars would now be registered in the region.

Annexure I
Profit & loss account
Hind Motors Ltd (HML)

(Rs. in Million)

	2004	2003	2002	2001	2000
A. Income:					
Operating Income	89,568.70	73,207.60	66,772.50	72,487.00	55,098.10
B. Expenses:					
Material Consumed	57,799.50	49,308.60	48,291.60	51,766.70	38,651.10
Manufacturing Expenses	6,642.60	5,292.00	3,727.00	4,379.40	3,730.60
Personnel Expenses	7,203.70	6,916.40	6,081.50	7,022.80	6,949.00
Selling Expenses	4,096.20	3,449.60	3,112.20	1,763.10	1,578.70
Administrative Expenses	4,897.30	4,000.00	3,381.50	4,427.90	3,922.30
Expenses Capitalized	-1,564.60	-1,446.30	-1,123.20	-2,265.80	-4,145.00
Cost Of Sales	79,074.70	67,520.30	63,470.60	67,094.10	50,686.70
Operating Profit (A-B)	10,494.00	5,687.30	3,301.90	5,392.90	4,411.40
Other Recurring Income	1,446.90	1,376.90	1,889.60	1,423.60	2,803.80
PBDIT	11,940.90	7,064.20	5,191.50	6,816.50	7,215.20
Interest Expenses	3,125.50	4,169.90	4,929.70	4,874.90	4,303.00
Depreciation	3,595.10	3,546.80	3,473.70	3,426.10	2,813.20
Other Write offs	26.20	898.30	1,373.60	380.00	347.80
PBT	5,194.10	-1,550.80	-4,585.50	-1,864.50	-248.80
Tax Charges	2,105.80	-549.40	12.50	51.50	105.40
PAT	3,088.30	-1,001.40	-4,598.00	-1,916.00	-354.20
Non Recurring Items	3.80	-439.40	-17.30	2,585.00	1,278.40
Other Non Cash adjustments	-91.00	903.50	-388.10	43.00	54.30
Reported Net Profit	3,001.10	-633.90	-5,003.40	712.00	974.60
Earnings Before Appropriation	3,001.10	-537.30	-3,648.50	2,019.70	2,259.70
Equity Dividend	1,279.10	0.00	0.00	639.60	767.60
Retained Earnings	1,558.10	-537.30	-3,648.50	1,239.40	1,407.70

Annexure I (contd.)

Balance sheet
Hind Motors Ltd (HML)

(Rs. in Million)

	2004	2003	2002	2001	2000
SOURCES OF FUNDS					
Equity Share Capital (Face value =Rs 10)	3,198.30	3,198.20	2,559.00	2,559.00	2,559.00
Reserves & Surplus	22,773.30	21,452.40	29,978.80	34,982.20	35,050.50
Secured Loans	10,373.20	13,447.80	18,133.30	16,502.70	22,255.00
Unsecured Loans	4,209.90	9,629.40	11,855.50	13,539.90	12,197.30
Total	40,554.70	47,727.80	62,526.60	67,583.80	72,061.80
USES OF FUNDS					
Fixed Assets					
Gross Block	58,601.00	57,695.00	56,381.40	54,204.40	43,485.50
Less: Accumulated Depreciation	27,104.50	24,317.20	20,906.70	18,281.80	16,533.40
Net Block	31,496.50	33,377.80	35,474.70	35,922.60	26,952.10
Capital Work-in-progress	1,569.30	1,405.60	2,761.30	3,918.90	13,501.00
Investments	11,959.80	11,899.20	13,871.80	12,007.40	10,293.80
Net Current Assets					

Current Assets, Loans & Advances	30,245.40	28,521.30	27,658.00	30,256.10	44,260.60
Less: Current Liabilities & Provisions	35,631.80	27,476.10	26,158.00	22,393.00	30,296.20
Total Net Current Assets	-5,386.40	1,045.20	1,500.00	7,863.10	13,964.40
Miscellaneous expenses not written	915.50	0.00	8,918.80	7,871.80	7,350.50
Total	40,554.70	47,727.80	62,526.60	67,583.80	72,061.80

Annexure II

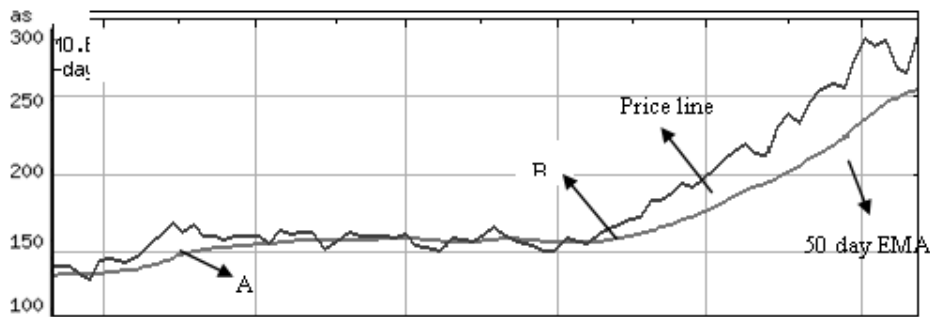
Closing Prices of Hind Motors Ltd & Market index

End of Month	Share price of Hind Motors (Rs.)	Market Index
April 2004	129.1	1084.5
May 2004	121.1	1028.8
June 2004	155.4	1057.8
July 2004	127.1	958.9
August 2004	139.5	1010.6
September 2004	132.4	963.15
October 2004	144.75	951.4
November 2004	169.2	1050.15
December 2004	161.4	1093.5
January 2005	153.6	1041.85
February 2005	163.15	1063.4
March 2005	155.65	978.2

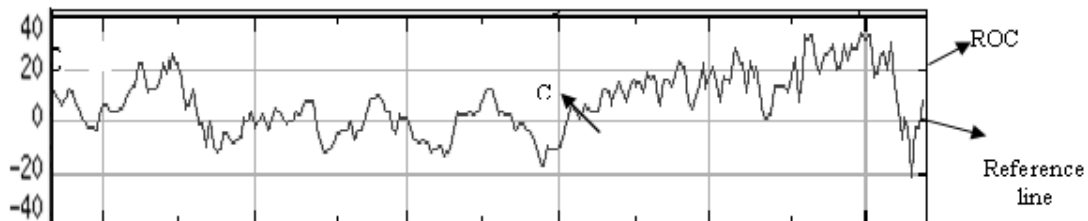
Annexure III

Technical Charts of Hind Motors Ltd.

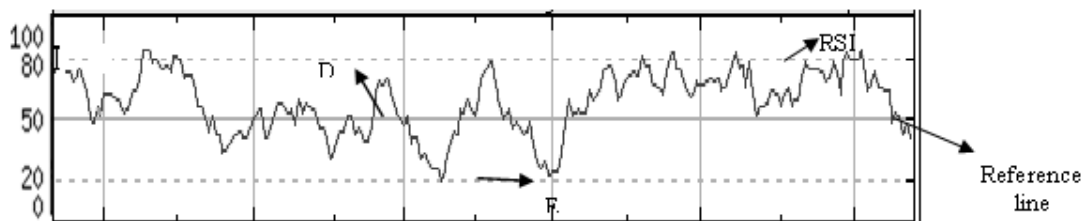
EMA Chart



ROC Chart



RSI Chart



END OF SECTION D

Section E : Caselets (50 Marks)

This section consists of questions with serial number 6 - 11.

Answer **all** questions.

Marks are indicated against each question.

Do not spend more than 80 - 90 minutes on Section E.

Caselet 1

Read the caselet carefully and answer the following questions:

6. There are various factors, both internal as well as external to the company, that have an impact on the risk of an investment in the company. Identify these factors and explain them.
(8 marks) < Answer >
7. The caselet states that beta can never capture the impact of change in interest rates on stocks prices. Explain how stock prices are affected by changes in interest rates.
(9 marks) < Answer >

Successful investment is not about balancing risk and reward. It is actually about reducing the risks while trying to increase the returns. Much of investing theory, and indeed most financial and business decisions are based on

measuring the likely reward and risk arising from a particular choice. The commonly held view is that investments with higher risk provide higher reward. Looking at this another way, if you want better returns, you should be willing to bear greater risk. This is all very well in theory, but how does one measure risk? By one definition, "Risk is a measure of the possibility of losing money." Now, anybody will tell you that it is next to impossible to estimate this. All we can do is make some assumptions based on historical data. The first risk you take while investing is that of inflation. Since inflation affects all investments equally, most discussions centre around what is called market risk, or the probability of loss due to price fluctuations in the financial markets. The most common basis for calculating the price volatility of a given security is the beta. So if the value of a stock (or mutual fund) fluctuates wildly, it has a higher beta. Since the fluctuations are large, it is inferred that the probability of loss is greater. Hence, such stocks are considered more risky. Similar calculations are performed across different classes of investments. So we are told that bank deposits are the least risky, because they don't fluctuate at all. Next on the risk ladder would be government bonds, followed by corporate bonds, and finally equity mutual funds and stocks - which are deemed as being the riskiest.

There are several problems with this approach. For one, it neglects the movement of interest rates. Though bonds have historically exhibited lower volatility than stocks, this does not mean that at all points of time, the probability of losing money in bonds is lower than that of stocks. For instance, interest rates are currently trending towards historic lows. At some point they will bottom out. If they rise thereafter, bonds will lose substantial value. Measuring volatility or beta can never capture the interest rate risk. Measuring volatility or beta can never capture the interest rate risk.

Another problem is that the method attaches far too much importance to historic price data. For example, let's consider our own Hindustan Lever (HLL). Their stock has traditionally been far less volatile than most Indian stocks. So an investor who got burnt in the technology fallout might well have thought this a "safe" investment. But over the last few months, HLL has lost significant value, while "riskier" stocks like Bharat Forge or Bank of India have provided superlative returns. As all the above examples demonstrate, the beta only measures historic volatility. In real life, risk arises out of factors like business cycles, competition, natural or man-made disasters or hundreds of other events - either external to the company or internal. Measuring risk involves an assessment of these, and their likely impact on the investment in question. According to legendary investor Warren Buffet, risk is primarily dependent on the price you pay. If you were to buy a kilo of gold for Rs 5,500, it is a lot riskier than if you were to pay Rs 4,000 for the same kilo of gold. However, the expectation of reward is much higher in the latter case, simply because it is cheaper. So according to the tenets of value investing espoused by Buffet, "The greater the potential for reward in the value portfolio, the less risk there is." In 1996, Infosys was available at a P/E of less than 10, and all other software stocks were at single digit P/E ratios. However, in 2000, P/E ratios were in triple digits. Didn't that make them more risky? Note again that this has nothing to do with the historic volatility.

Using betas, a stock that fell 50% last year might be classified as extremely volatile, hence risky. And if the scrip had lost 80% of its value, then it would have been labelled as even more risky. But at the same time, the drop in price may actually have made it so cheap compared to its intrinsic value that the actual risk has in fact, reduced. Ultimately, we are buying parts of a business. When we buy a house, or gold, or any other physical good, we intuitively measure the risk based on the price we are paying. We all understand that a good bargain carries lower risk, and yet has the potential for higher reward. But when it comes to stocks, somehow we lose this common sense. We are swayed by sentiment, recent price movements and all the nonsense spewed by those who have nothing better to do than calculate betas for hundreds of stocks. One reason is that we don't know how (or we don't try) to estimate the intrinsic value of a business. While it is easy to look at say, a house, estimate its value based on prevalent rates in the area and come to a decision about whether we're getting a good deal - the same is not so easy in the stock market. At the same time, it is not impossible. Nobody can put a definite number to intrinsic value. However, it is possible to arrive at a general estimate or range. Naturally, this requires some study of the company, its management, the industry it operates in, competition, possible threats and so on. But then, this study or knowledge is precisely what enables you to reduce the risk. Since no calculation of intrinsic value can be exact or "correct", budget for a margin of error. Then, only if you think the stock is trading at a significant discount (what Buffet calls the "margin of safety") to the intrinsic value, do you buy. The larger the discount, the greater the margin of safety, the lower the risk, and the higher the potential reward.

The track record of value investors like Buffet, Tom Knapp, Walter Schloss, Bill Ruane and many others speaks for itself. All of them used the basic principles of value investing. Their actual methods of valuation, favourite sectors, and investment techniques were actually quite different. But the one thing they had in common, was that they studied the companies they bought, and looked for significant bargains in order to reduce risk. Ultimately, successful investment is not about balancing risk and reward. It is actually about reducing the risks while trying to increase the returns.

Caselet 2

Read the caselet carefully and answer the following questions:

8. The caselet states that periodic earnings announcements do serve a purpose as they reveal information that would give a fair idea of the progress of the company. Briefly discuss the non-financial factors to be examined by an investor to assess the progress of the company.

(9 marks) < Answer >

9. As an analyst, explain the important characteristics that you would analyze before you identify an industry for investment.

(10 marks) < Answer >

Periodic earnings announcements may not tell the whole story but they definitely provide the gist of it. These numbers may lead to higher or lower expectations and affect the valuation of the stock. At times the management may also resort to window-dressing to meet the forecasts. But does it mean that these numbers are irrelevant? What information can you glean from interim financial reports? Periodic earnings announcements do serve a purpose as they reveal information that would give a fair idea of the progress of the company. Additional disclosures, such as segment reporting, presentation of consolidated results and the geographical break-up, give a lot of information that would otherwise not be available in public domain at such frequency.

Analyst presentations and conference call transcripts are also available on certain company web sites. These are valuable sources of information and give insights into the companies' operations and prospects. They give you a feel of what is happening in a company and where is it heading in terms of business performance. Periodic financial disclosures also show how the company compared with its peers. They indicate a company's market position and control within the industry in that particular period and also point to whether a company has the potential to make the best of the given business conditions. The absence of such periodic disclosure leaves a gap in financial information. Worse, it could lead to selective disclosures, giving room for insider trading. Small investors would be left in the lurch due to non-availability of information. The market might witness wider swings due to speculation and selective disclosure. Information provided in financial statements is useful if scrutinized properly. For instance, the previous eight quarters' earnings announcements would indicate the trend in margins and earnings growth. Sharp deviations may require further scrutiny to judge the sustainability.

Any one-off instances having an impact on the earnings should be eliminated. Also, one has to be aware of the external factors governing the business and their effect on the earnings performance in any period. When making an investment decision, adequate discounting should be done for any risks associated with the business. This would be based on the investor's risk-taking ability. It might also pay to take an independent view of the stock without the market interest in a stock influencing your decision. Any stock that commands a higher valuation than its earnings can support will be vulnerable to volatility. Markets generally tend to overestimate the earnings growth potential of certain companies or get carried away by exceptional earnings announcements without looking at the ground realities. Often, stocks zoom or slump after earnings announcements and trade at valuations that cannot be sustained by earnings growth. It is better to avoid a stock that commands high multiples when the business environment is uncertain. Also, avoid momentum investing in such stocks. A little bit of caution and reasoning could protect you from extreme downside risks. But do remember that numbers are usually factored in the stock price and should not be taken fully at face value. Future performance would depend on a host of external factors. A fresh investment decision should be based on the general business environment and the scope for business growth.

Caselet 3

Read the caselet carefully and answer the following questions:

10. According to the caselet, announcements of bonus offers and stock splits have led to a sharp rise in share prices. The magnitude of price increase is unwarranted in quite a few cases. Do you agree? Discuss.

(6 marks) < Answer >

11. Discuss the motives behind a stock split and the advantages it provides to the company and its shareholders.

(8 marks) < Answer >

Even as equity market continues to be volatile and hovers about 12 per cent off highs, announcements of bonus offers and stock splits have led to a sharp rise in share prices. The magnitude of price increase is unwarranted in quite a few cases. The Unichem Labs stock, for instance, doubled after the announcement of a bonus and stock

split. Berger Paints' stock rose by about 50 per cent. Jubilant Organosys' stock, after a relentless uptrend that took the price past the Rs 1,000-mark, has settled ex-bonus at about Rs 715. Bonus issuers include the likes of Indian Oil Corporation, Exide Industries, Asian Paints, i-Flex Solutions, G G Automotive Gears, Moser Baer (India), Wockhardt, FDC and Marico Industries.

The trends over the past nine months are a contrast to the lukewarm response that bonus offers and stock splits used to elicit earlier. For instance, when Elgi Equipment split its stock about two-and-a-half years back, it had no effect on valuation. It was only when the fundamentals gathered strength that the stock began to attract interest in 2003, aided by enhanced liquidity. The Elgi experience suggests that if the market moves into a sluggish phase, such actions may not lead to the nature of uptrend that has been seen over the past year. Companies that completed the process in the bull market may also find their stocks being marked down subsequently.

The magnitude and pace at which prices get ramped up following such announcements also provide opportunity for informed trading. The possibility of management and market operators acting in tandem to announce such corporate actions and profit from the inevitable uptrend in bullish market conditions cannot be ruled out. At present, such actions can take effect over a two three-month period depending on the pace at which the legal formalities are completed.

SEBI needs to tighten the time frame to minimize the scope for abuse. There has been no instance of shareholders not approving a stock split or a bonus offer. The possibility of changing the law to allow stocks to trade on an ex-stock split or bonus basis with a specified period of, say, 15 days from the date of announcement by the board of directors has to be considered. This would represent a substantial change from the present system. But it may be an idea worth pursuing. If, in the rare case, shareholders disapprove of the move, there must be the flexibility to restore status quo.

END OF SECTION E

END OF QUESTION PAPER

Suggested Answers

Security Analysis-II (212): July 2005

Section D: Case Study

1. Michael Porter Analysis of Indian Car Industry:

Threat of Entry:

- Existing firms have strong brand name and unique identification is available for their brands in the market. This product differentiation of established firms creates entry barrier to the new firm.
- The industry is capital intensive, which acts as a barrier to entry.
- Access to distribution channels and economies of scales of established players in the market also increases entry barrier

Overall, entry barrier is high in this industry

Bargaining power of Buyers:

- These who buy in bulk, like the government departments and transport companies may have some bargaining power
- Individual buyers have less bargaining power.

Bargaining power of Suppliers:

- Of all the suppliers, companies that provide raw material for body panel and engine are the most powerful. Because it is major part of the total manufacturing cost of a car.
- Other suppliers may not have much bargaining power.

Threat of substitutes:

Substitutes for car comes in the form of other modes of transportations such as two wheelers and public transport system run by the government. Second hand car market is also growing very rapidly and it is definitely posing a threat to the new car market. Overall, threat of substitutes is high.

Competitive Rivalry:

- Competitive rivalry is likely to be intense due to low capacity utilization which will lead to an

inevitable marketing war between the car manufacturers

- Presence of many Indian and foreign companies and their strive for higher market share will increase the competitive rivalry among the existing players.

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2. Ratio Analysis

Profitability ratios	2004	2003	2002	2001
Operating profit margin (%)	11.72	7.769	4.945	7.44
Net Profit margin (%)	3.351	-0.87	-7.49	0.98
Return on Net worth (%)	5.54	-2.57	-15.4	1.9
Return On Investment (%)	10.92	3.48	0.39	3.35
Turnover ratios				
Fixed assets Turnover	2.71	2.10	1.75	1.82
Total asset Turnover	1.176	0.973	0.753	0.806
Liquidity ratios				
Current ratio	0.849	1.038	1.057	1.35
Leverage ratios				
Debt-equity	1.93	2.05	1.50	1.72
Interest coverage	2.66	0.63	0.07	0.62

Interpretation of ratios

The company has a consistently increasing operating profit margin. However, net profit margin is small and fluctuating. The net profit has increased tremendously in the last year from Rs.-633.90 to 3001.10 crore. This is a very healthy sign. The return on net worth (RONW) has fluctuated and improved in line with net profit margin (NPM). Return on investment (ROI) is showing an increasing trend. Although sales have increased in the last year there is also an increase in the cost of sales. Operating profit has just increased by almost 85% in the last year.

Fixed assets turnover ratio has increased during the last four years this implies that fixed assets are being efficiently utilized. Increasing total asset turnover ratio with increasing sales implies that the company is maintaining low level of total assets. If company is having low level of inventory it may affect its sales in the long run when there is an increase in demand. However, this may also mean improving efficiency in the utilization of total assets.

Company's liquidity position is not comfortable as shown by a declining current ratio. The current ratio is below one. This shows that company is not well protected with its liquidity position to meet its current liabilities. Net current asset during the last year is showing negative value, which indicates the worsening liquidity position of Hind Motors.

Company is having a high debt-equity ratio and it has declined from the year 2003. A huge amount of both secured and unsecured loans have been reduced by the company. However, at the same time its current liabilities have increased. Presently, interest cover is high but it was low and less than two before the last year. This increase in the coverage ratio and decline in the total-debt equity ratio shows healthy probability of the company which is in a position to meet its interest obligation..

Hence, the company appears to have a favorable financial position in the year 2004 in all fronts except some liquidity problems and may be needs to be observed before making an investment.

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3. a.

January 2005	-4.833
February 2005	6.217
March 2005	-4.597

The standard deviation of the return of Hind Motors stock = 13.05 %

Mean of return = 2.452%

Probability that the return will be between zero and 5% can be calculated as follows:

$$\begin{aligned}
 P\left(\frac{0 - (2.452)}{13.05} < Z < \frac{5 - (2.452)}{13.05}\right) \\
 &= P\left(\frac{-2.452}{13.05} < Z < \frac{2.548}{13.05}\right) \\
 &= P(-0.188 < Z < 0.195)
 \end{aligned}$$

From the normal distribution table, the area for

$$P(Z < -0.188) = 0.4254$$

$$P(Z < 0.195) = 0.5773$$

$$P(-0.188 < Z < 0.195) = 0.5773 - 0.4254 = 0.1519 = 15.19\%$$

- b. Returns from Hind Motors and the market Index can be regressed to estimate the characteristic line of Hind Motors. (Note: $\bar{X}$, $\bar{Y}$, S_y^2 , S_x^2 , Cov_{xy} have been derived from MS Excel spread sheet. There may be minor variations in the intermediate calculations shown below, compared to calculations based on a standard calculator, which are insignificant and can be ignored)

Returns from Hind Motors (Y)	Returns from Market Index (X)	$(Y - \bar{Y})$	$(X - \bar{X})$	$(Y - \bar{Y})^2$	$(X - \bar{X})^2$	$(Y - \bar{Y})(X - \bar{X})$
-6.197	-5.136	-8.65	-4.377	74.818	19.158	37.86
28.32	2.819	25.871	3.578	669.29	12.801	92.561
-18.21	-9.35	-20.66	-8.591	427	73.798	177.52
9.756	5.392	7.3031	6.151	53.335	37.83	44.918
-5.09	-4.695	-7.543	-3.936	56.891	15.494	29.689
9.328	-1.22	6.8748	-0.461	47.263	0.2125	-3.169
16.89	10.38	14.438	11.14	208.46	124.06	160.82
-4.61	4.128	-7.063	4.887	49.885	23.883	-34.52
-4.833	-4.723	-7.286	-3.964	53.082	15.716	28.883
6.217	2.068	3.7644	2.827	14.171	7.9944	10.644
-4.597	-8.012	-7.05	-7.253	49.702	52.607	51.134
26.98	-8.35			1703.9	383.56	596.34

$$\bar{Y} = \frac{\sum Y}{n} = \frac{26.98}{11} = 2.452\%$$

$$\begin{aligned}\bar{X} &= \frac{\Sigma X}{n} = \frac{-8.35}{11} = -0.759 \% \\ S_y^2 &= \frac{\Sigma(Y - \bar{Y})^2}{n-1} = \frac{1709.3}{10} = 170.365 (\%)^2 \\ S_x^2 &= \frac{\Sigma(X - \bar{X})^2}{n-1} = \frac{383.56}{10} = 38.356 (\%)^2 \\ \text{Cov}_{xy} &= \frac{\Sigma(X - \bar{X})(Y - \bar{Y})}{n-1} = \frac{596.305}{10} = 59.631 (\%)^2 \\ \text{Beta} &= \frac{59.631}{38.356} = 1.5547\end{aligned}$$

Mean return from Hind Motors = 2.452%

Mean return from the market index = -0.759%

If the characteristic line is $\alpha + \beta R_m$

$$\begin{aligned}\alpha &= 2.452 - (-0.759 \times 1.5547) \\ &= 3.632\%\end{aligned}$$

Hence, the characteristic line of Hind Motors is

$$R_p = 3.632 + 1.5547 R_m$$

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4. Stock price on August 31, 2005 = Rs 281.05

Current EPS = Rs. 3,001.10/319.83 = Rs. 9.38

$DPS_1 = 9.38 \times 0.30 \times (1.08) = 3.039$

$DPS_2 = 9.38 \times 0.30 \times (1.08)^2 = 3.282$

$DPS_3 = 9.38 \times 0.30 \times (1.08)^3 = 3.545$

$DPS_4 = 9.38 \times 0.40 \times (1.08)^3 \times 1.12 = 5.294$

$DPS_5 = 9.38 \times 0.40 \times (1.08)^3 \times (1.12)^2 = 5.93$

Constant DPS = $9.38 \times 0.25 \times (1.08)^3 \times (1.12)^2 \times 1.05 = 3.89$

According to Dividend Discount Model

$$\begin{aligned}281.05 &= \frac{3.039}{(1+k)} + \frac{3.282}{(1+k)^2} + \frac{3.545}{(1+k)^3} + \frac{5.294}{(1+k)^4} \\ &\quad + \frac{5.93}{(1+k)^5} + \frac{3.89}{(1+k)^5(k-0.05)}\end{aligned}$$

At $k = 6\%$, R.H.S = 308.07

At $K = 7\%$, R.H.S = 155.54

By Interpolation,

$$k = 6 + \frac{(7-6)}{155.54-308.07} (281.05-308.07) \% = 6.18\%$$

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5. a. From an analysis of the technical charts for Hind Motors, the following recommendations can be given:

A: At this point both moving average and price line has started rising it is an indication to buy

B: Price line falls below a rising moving average line – so it does not indicate any trend reversal – the indication is to buy, to gain from the rebound in the secondary reaction.

- C: The ROC index is rising while it is below the reference line. So it is an indication of the reversal of the falling trend and hence the signal is to buy.
 - D: As the point is falling on the reference line, the signal is not clear; so it is an indication to hold and not to either buy or sell
 - E: RSI has touched the lower limit of the RSI chart; this indicates an oversold position and price rise is expected, so it is an indication to buy.
- b. The following are the important principles useful while observing crossover of moving average line over price line:
- i. When the moving average rise above the price line, a reversal in bullish trend is signaled. This is based on the simple logic that as long as price at the end of a period is above the average that prevailed in the immediate past, prices are on an up trend. The converse is true for confirming the end of a bear market. The price line in that case would crossover the moving average.
 - ii. The price line moving average crossover has to be examined cautiously when the price line and moving average move in opposite directions before the crossover. The price line that falls below a rising moving average only indicates a secondary reaction and need not signal a trend reversal. Similarly, a price line that rises above a falling moving average is an indication to sell.
 - iii. A moving average represents a smoothened trend and therefore, also acts as a support/resistance line. A declining price line and rallies without crossing the line. Similarly, a rally in a bear market meets resistance at the moving average, and turns down.
 - iv. If the moving average is flat or has already begun to change direction, a crossover by the price line is a fairly reliable indicator of trend reversal.
 - v. The significance of a crossover signal depends, to a large extent, on the time span covered by a moving average. A moving average covering a long-term trend, and its crossover is more significant than a crossover of an average of shorter time span.

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Section E: Caselets

Caselet 1

6. Risk arises out of factors like business cycles, competition, natural or man-made disasters or hundreds of other events - either external to the company or internal are termed as unsystematic risk . Unsystematic Risk is specific to particular company or an industry. Unsystematic risk is that portion of total risk that arise due to the factors which effects the internal working of the firm. Factors like, management capability, consumer preferences, labor strikes and stages in product life cycle can affect the firm's variability in return. Two main sources of unsystematic risks are, business risk and financial risk. Business risk is faced by the firm due to the operating conditions prevailing within a firm and also the extent to which these conditions effects the operating income and expected dividend variability of the firm. Business risk can be divided into two categories: internal and external. Internal Business Risk signifies the internal competency or efficiency of the firm to effectively operate in the environment imposed on it. Every business firm is faced with internal risks and the degree to which these risk are minimized are reduce or minimized depends on the efficiency of the firm. For example, the firm can minimize the chances of labor strikes by efficiently managing the management-labor relationship. External Business Risk arises from the circumstances imposed by the operating environment, which are beyond the control of the firm. Every firm faces certain external risk, which arises as the result of operating in the specific industry. For example sales in steel and auto industries move in accordance to the business cycle. Demographic considerations also effects the revenue of a firm also the political policies which include monetary and fiscal policies effect are a important part of external business risk.

The ways and means by which company finances their activity constitutes Financial Risk. The degree of financial risk can be inferred from the capital structure of a firm. The amount of debt or borrowed capital in the financial structure signifies interest payment by the firm to the debt holders or preference shareholders. As a result of which the earning left for equity shareholders keep varying depending on the interest & principal payments. Financial risk can be avoidable to the extent to which the management has the freedom to decide whether to borrow money or not. A debt free firm has no financial risk.

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7. Interest rate is the cost of money. In a manufacturing concern, a company arrives at a profit figure after deducting the cost of materials, labour and other expenses. Similarly, for investments, we should also take into consideration the cost of money before concluding whether we have made a profit. At the most basic level, the cost of money to an investor who uses cash would be the bank deposit rate. It would be the opportunity cost, ie had he not used the money to buy stocks, they would be earning interest from the bank. And since it's more risky to hold stocks than to have money in the bank, you should also add a risk premium before you can say you've made a profit. The riskier a stock the higher the premium. So this, added to the 'risk-free' deposit rate, will be an investor's cost of capital. If your cost of capital is high, you have to make sure that your return from an investment is sufficiently high to compensate you for the opportunity loss of earning interest from the bank and for taking on additional risk. In other words, the stock price has to be low enough to increase your chances of raking in the required return. Consequently, an investor's cost of capital or required rate of return is one of the most fundamental building blocks used in the discounted cash flow model to find the 'fair value' of stocks. Basically, a stock's fair value is its projected future cash flow discounted to the present using the investors' required rate of return. The higher the rate, the lower the fair value. While the risk premium differs from stock to stock, the risk-free rate affects all stocks. This is why the market cheers when government announces a cut in rates, and vice versa. Companies too are users of capital. Their capital can be bank loans or shareholders' funds. Any increase in the interest rate will raise both their cost of equity and debt. Thus a company has to work harder to generate higher returns in a high interest environment. If not, the bloated interest expense will eat into its profits. Lower profits and cash inflows, and higher investors' required rate of return, translate into depressed fair value for the stock. Furthermore, if the interest costs shoot up to such a level that the company has problem servicing its loans, then its survivability may be threatened. In such a scenario, shareholders will demand an even higher risk premium. As a result, the fair value will decline even further. Finally, high interest rates generally correspond with a sluggish economy. The prohibitive rates may deter people from buying property, consumers from spending and companies from investing in new assets. All these will mean declining sales and profits, hence declining stock prices.

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Caselet 2

8. The important non-financial factors to be examined by an investor are as follows:

Business of the company

The investor should know whether the company is a well-established one, whether it has a good product range and whether its lines of business have considerable potential to grow.

Top Management

The quality of top management team, particularly, the competence and the commitment of the chief executive officer matters a lot in shaping the destiny of the company.

Product Range

Progressive companies like ITC and Hindustan Lever create competition for their existing products by launching new products with regular frequency. Hence investors must examine whether the company under review belongs to this group or not.

Diversification

An issue related to that of product range is diversification. To reduce the degree of business risk and improve profitability, many companies resort to diversification. Hence this issue is to be carefully examined by the investor.

Foreign Collaboration

Where a company has entered into technical collaboration with a foreign company, the investor must find out more about the nature of the collaboration agreement.

Availability and Cost of Inputs

If the company depends upon imported raw materials, it is important for the investors to assess the raw material position, because any shortage of the raw material and/or escalation in the cost of raw material will adversely affect the profitability.

Research and Development

Progressive companies spend substantial sums of money on R&D to upgrade their existing products, introduce new products, adapt foreign technology to suit the local conditions, achieve import substitution, etc.

Governmental Regulations

The investor must assess the implications of governmental regulations such as MRTP Act, FERA, pollution control regulations etc., for the company under review.

Pattern of Shareholding and Listing

The pattern of shareholding has a bearing on the floating stock available in the market and the trading volume of these issues will have an effect on the company, hence it will be analyzed by the investor before taking any investment decision.

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9. Before taking a decision for making an investment, every industry has to be analysed thoroughly. The most important of the characteristics that are to be evaluated for an industry are given below:

- Past sales and earnings performance
- Performance of the industry.
- The attitude of the government towards the industry.
- Labor conditions within the industry.
- The competitive conditions as reflected by the existence of the entry barriers and
- The stock prices of the firms in the industry relative to their earnings.

Past sales and earnings performance: For an analyst, past sales and earnings performance of the firm form a crucial input in forecasting future trends. This is because by examining the contribution of various factors in the past sales reveals the relevance of these factors individually and relatively under present conditions.

In any firm sales and the earnings play an important role. These variables will exhibit a degree of consistency only when the firm has weathered a variety of economic conditions. The analyst from the observation of these variables will be able to judge the stability of the performance in terms of sales and earnings as well as the growth rates.

Another crucial factor is that of the relationship between the sales and the fixed costs. The more the fixed costs, the higher will be the breakeven point and higher will be the sales volume to be achieved.

Performance of the industry:

By performance, we understand the products and the technology of a particular industry not becoming obsolete in a short span of time. If the industry is not permanent, then investing in that industry altogether becomes a losing proposition. In some of the cases a product with additional features manufactured by employing superior technology makes the existing product totally irrelevant or at least results in the manufacturing process becoming a commercially enviable proposition.

In this age of rapid technological developments, this factor plays a crucial role in industry analysis. The Government's role is also an important factor affecting the performance of the industry.

The attitude of the government towards the industry:

It is imperative for an analyst that he should be well aware of the various Government policies and regulations with reference to an industry in which investment is considered. The government policies like deregulating an industry by allowing foreign investment, imposing high tariffs on imports and restrictive legislation have a bearing on their performance. Some of the legal restrictions result in the profits being very low for a particular industry. Thus an analyst, for that matter, an investor should be thorough with various government regulations and their implications and should be able to predict, at least broadly, the changes likely to take place in the regulations in the near future.

Labor conditions within the industry:

This is an important factor to be considered in industries which are labor intensive. An analyst should examine the various provisions of the labor laws and also go into the possible reasons that may halt the production process and its fallout on the profits of the industry. In case of a prolonged strike, a labor intensive firm will not only lose its customers and goodwill but also may not be able to cover its fixed costs in certain cases.

Competitive conditions:

While analyzing this situation, the three general types of barriers that an analyst should concentrate on ,are

- Existence of product differentiation
- Absolute cost advantages
- Advantages rising from economies of scales

The existence of the first barrier assures that a new entrant will not be able to charge as much by the existing firms. Also he has to spend large amounts of money on advertising to capture an acceptable share of the market as this situation is usually found in cases where the customers exhibit a high degree of brand loyalty. By absolute cost advantages, we understand that the existing firms are capable of producing and distributing the products at lower costs than the new entrants irrespective of the volume produced. As a result, they enjoy wider profit margins. This may be due to the fact that the existing firms may have exclusive patents ,own the resources or superior management skills that are not available to new entrants. Economies of scale are usually realized when the production are quite high. A new entrant in this case also has to garner a significant market share so that he can avail the benefits from economies of scale. An analyst or a prospective investor should consider investment in an industry which is well protected.

Industry share prices relative to its earnings

In addition to the above factors an analyst also has to look at the present share prices. In this case an underpriced share would be the best bet. Also an analyst should examine the fact that the share prices are not high due to the overzealous nature of the investors to acquire the shares of the firms in a new industry. Usually the shares of these companies experience high fluctuations depending on the crowd behavior.

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Caselet 3

10. In each of these companies, there has not been any significant change in the business fundamentals to warrant the magnitude of the price spurt. Bonus offers and stock splits are wealth-neutral accounting adjustments that may lead to some transitory immediate gains. Such corporate actions can also have a sustained positive effect on valuation, which may, however, be reflected only over a longer time frame. As a result of bonus issue or stock split, the number of floating stock will increase leading to a higher liquidity in the stock. This may in turn lead to a higher price-earnings multiple (PEM). The likelihood of a higher PEM will also be valid only if the earnings growth story does not lose momentum. Further, as a bonus issue implies taking recourse to an internal source of finance by capitalizing free reserves, the shareholders may be pleased as they are not required to contribute additional capital nor the company is raising any debt. However, immediate and sudden price rise cannot be justified. In the long term, the business growth and earnings momentum and competitiveness of the company will have a bigger role to play in increasing wealth for the shareholder.

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11. There are several reasons companies may consider this corporate action. The first reason is investor psychology. As the price of a stock gets higher and higher, some investors may feel the price is too high to buy, or small investors may feel it is unaffordable. Splitting the stock brings the share price down to a more attractive level. The actual value of the stock doesn't change one bit, but the lower stock price may affect the way the stock is perceived and therefore entice new investors. Splitting the stock also gives existing shareholders the feeling that they suddenly have more shares than they did before. A final motivation for splitting the stock is to increase a stock's liquidity, which increases with the stock's number of outstanding shares. None of these reasons or potential effects jive with financial theory. Splits are a good demonstration of how the actions of companies and the behaviors of investors do not always fall in line with financial theory.

Advantages for Investors

There are plenty of arguments over whether a stock split is an advantage or disadvantage to investors. One side says a stock split is a good buying indicator, signaling that the company's share price is increasing and therefore doing very well. This may be true, but on the other hand, you can't get around the fact that a stock split has no effect on the fundamental value of the stock and therefore poses no real advantage to investors. Historically, buying before the split used to be a good strategy because of commissions that were weighted by the number of shares you bought. Buying a stock before rather than after it split was advantageous only because it saved you money on commissions. This isn't such an advantage today because most brokers offer a flat fee for commissions, so you pay the same amount whether you buy ten shares or 1000 shares. Some online brokers have a limit of 2000 or 5000 shares for that flat rate, but most investors don't buy that many shares at once. The flat rate therefore covers most trades, so it does not matter whether you buy

before or after the split.

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