

Question Paper
Equity: Analysis & Valuation (CFA610) : October 2008
Section A : Basic Concepts (30 Marks)

- This section consists of questions with serial number 1 - 30.
- Answer all questions.
- Each question carries one mark.
- Maximum time for answering Section A is 30 Minutes.

1. Which of the following is a purpose for the construction of stock indices?

[<Answer](#)
[≥](#)

- (a) The growth in the primary market volumes can be measured through the movement of index
- (b) Indices help in finding the quantum of FII investments
- (c) Indices help in deciding on the allocation of resources between productive and non-productive lines of activities
- (d) The changes in share prices across the market can be estimated through the movement of indices
- (e) An index helps in finding the gain/loss from investment in a particular share.

2. Which of the following is **not** a lagging indicator?

[<Answer](#)
[≥](#)

- (a) Average duration of unemployment
- (b) Average prime rate charged by banks
- (c) Commercial and industrial loans outstanding
- (d) Initial claims for unemployment insurance
- (e) Change in index of labor cost per unit of output.

3. Which of the following statements is **false** with respect to Head and Shoulders price pattern?

[<Answer](#)
[≥](#)

- (a) Volume is low at the left shoulder and continues to fall, albeit at a lower rate
- (b) The left shoulder signifies the penultimate rally in the bull market
- (c) Neckline is a line that joins the points from where the final rally begins and ends
- (d) The right shoulder confirms the beginning of a bear market
- (e) Head and shoulders pattern occurring at market bottoms is called inverted head and shoulder.

4. Data pertaining to Monster Ltd. is given below :

[<Answer](#)
[≥](#)

Day	Closing price (Rs.)	100 day EMA for previous day (Rs.)
1	75.00	71.00
2	78.00	72.50
3	84.00	73.00

The 100 day EMA for day 3 is

- (a) Rs.52.58
- (b) Rs.67.89
- (c) Rs.73.22
- (d) Rs.81.05
- (e) Rs.96.41.

5. Which of the following statements is **not true** with respect to industry analysis?

[<Answer](#)
[≥](#)

- (a) Pioneering stage may offer the highest potential returns and the risk as well
- (b) Companies may have high dividend payouts in the maturity stage
- (c) Growth is rapid but orderly for the companies in the expansion stage
- (d) Stabilization stage is more appealing to the investors primarily interested in capital gains
- (e) Companies do not experience significant growth in the stabilization stage.

6. Which of the following statements is/are **true** concerning all the three forms of the efficient market hypothesis? <Answer
≥

- I. Equilibrium rate of return will prevail.
- II. Securities of firms are selling at their fair value.
- III. Investors cannot earn a positive return.
- IV. Market prices reflect all publicly available information.

- (a) Only (I) above
- (b) Only (IV) above
- (c) Both (I) and (II) above
- (d) Both (I) and (IV) above
- (e) All (I), (II), (III) and (IV) above.

7. Which of the following reduces assets and stockholder's equity? <Answer
≥

- (a) Stock splits
- (b) Cash dividends
- (c) Stock dividends
- (d) Reverse stock splits
- (e) Bonus issues.

8. The following details pertain to an issue of convertible bonds by M/s. Krishna Ltd.: <Answer
≥

Bond price	Rs.100
Market price of one Equity (face value Rs.10)	Rs.8.25
Conversion Rate	11

The conversion parity price of the stock is

- (a) Rs. 8.25
- (b) Rs. 9.09
- (c) Rs. 9.25
- (d) Rs.10.19
- (e) Rs.10.45.

9. Which of the following statements is **not true** with respect to the Security Market Lines (SML)? <Answer
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- (a) SML represents the normal trade-off between return and risk
- (b) The vertical distance of the security's plot on the graph from the SML is called the security's alpha
- (c) Validity of the CAPM can be tested by constructing ex-post SML
- (d) Ex-post SMLs are used to evaluate the performance of portfolio managers
- (e) The slope of the SML is the beta for particular security involved.

10 Consider the following data for two securities A and B: <Answer
≥

Particulars	Security A	Security B
Expected Return (%)	12	13
Standard deviation of returns (%)	21	29
Beta	1.10	1.20

Variance of returns on the market index is $400 (\%)^2$. The correlation coefficient between the returns on securities A and B is 0.94.

The systematic risk of a portfolio consisting of these two securities in equal proportions is

- (a) $24.63(\%)^2$
- (b) $460.00(\%)^2$
- (c) $529.00(\%)^2$
- (d) $606.73(\%)^2$
- (e) $802.40(\%)^2$.

11. Which of the following statements are **true** with respect to Point and Figure Charts (PFC)?

[<Answer](#)
[≥](#)

- I. A PFC does not have time dimension.
- II. A PFC measures every movement in price.
- III. The decision about the size of a point is essentially based on price range.
- IV. The decision about the size of a point is essentially based on volatility of the stock.

- (a) Both (I) and (III) above
- (b) Both (II) and (IV) above
- (c) (I), (II) and (III) above
- (d) (I), (III) and (IV) above
- (e) (II), (III) and (IV) above.

12 The expected P/E ratio of a stock after one year is 12. The expected dividend from the stock is Rs.2.00 per share with an EPS of Rs.10. The expected return for holding the stock for 1 year, if it was bought for Rs.90 per share is

[<Answer](#)
[≥](#)

- (a) 35.56%
- (b) 40.26%
- (c) 43.86%
- (d) 44.23%
- (e) 44.86%.

13 Which of the following is a natural entry barrier?

[<Answer](#)
[≥](#)

- (a) Control over raw material
- (b) Licensing policy of government
- (c) Control over technology
- (d) Economies of scale
- (e) Control over market through strong brand equity.

14 Which of the following statements are **true** with respect to types of order for buying and selling of securities?

[<Answer](#)
[≥](#)

- I. All market orders are day orders only and provide immediate liquidity.
- II. A stop order to sell becomes a market order if the market price goes below the spot order price.
- III. Open orders are known as “good till cancelled” orders.
- IV. In a stop limit order to buy, the investor can specify the maximum price that he is ready to pay for the stock.

- (a) Both (I) and (II) above
- (b) Both (II) and (III) above
- (c) Both (III) and (IV) above
- (d) (I), (II) and (III) above
- (e) All (I), (II), (III) and (IV) above.

15 M/s Sehgal has paid a dividend of Rs.3.50 for the last year with a growth rate of 12% and the company's share is currently trading at its intrinsic value of Rs.65.50, the required rate of return of the company is

[<Answer](#)
[≥](#)

- (a) 11.32%
- (b) 12.01%
- (c) 13.61%
- (d) 14.55%
- (e) 17.98%.

16 Which of the following technique is used to identify the trend reversal before it takes place?

[<Answer](#)
[≥](#)

- (a) Volume of the market
- (b) Momentum
- (c) Simple moving average
- (d) Breadth of the market
- (e) Weighted moving average.

17 Which of the following statements is/are **true** for Runaway gaps?

<Answer
≥

- I. Runaway gaps represent gaps occurring before a trend ends, or gaps that precede the last leg of a bullish or bearish trend.
 - II. A runaway gap is created when price breaks out of a price pattern, and such breakouts are more valid than those occurring without a gap.
 - III. Runaway gaps occur when prices are on a rapid uptrend or downtrend.
 - IV. A runaway gap is normally treated as a sign of consolidation.
- (a) Only (II) above
 - (b) Only (III) above
 - (c) Both (I) and (III) above
 - (d) Both (I) and (IV) above
 - (e) All (I), (II), (III) and (IV) above.

18 Which of the following statements is **not true** with respect to profitability ratios?

<Answer
≥

- (a) Gross profit margin ratio shows the profits relative to sales after the direct production costs are deducted
- (b) Net profit margin ratio indicates the firm's capacity to face the adverse economic conditions such as price competition, low demand, etc
- (c) Earning power is a measure of operating profitability
- (d) Return on equity measures the profitability of equity funds invested in the firm
- (e) Earning power is not suitable for inter-firm comparisons.

19 Computerized trading systems basically follow two different approaches namely price/quote-driven and order-driven systems. Which of the following statements is **false** with respect to the aforesaid systems?

<Answer
≥

- (a) The quote-driven system allows the market maker to buy a limit order at the bid price and sell it at the offer price
- (b) In order-driven market, the trader submits the order
- (c) In price-driven market, the dealer posts a firm's quote and provides free option
- (d) In price-driven market, the dealer has the risk of being picked off due to the danger in placing the order because of the absence of well developed markets
- (e) A call auction market is an order-driven market as all the traders openly post their orders and the transaction price is derived through equilibrating the demand and supply of the stock.

20 Consider the following data for a stock:

<Answer
≥

Current abnormal growth rate	=	8%
Normal growth rate	=	4%
Current dividend per share	=	Rs.3.00
Required rate of return	=	12.5%

If the time period during which the current abnormal growth rate will become normal growth rate is 6 years, the premium on the stock due to abnormal growth rate is

- (a) Rs. 1.41
- (b) Rs. 4.24
- (c) Rs. 8.26
- (d) Rs. 9.21
- (e) Rs.12.52.

21 Sneha Textiles Ltd. reported an EPS of Rs.72.65 and paid dividend of Rs.18 last year. The capital expenditure per share was Rs.160 and depreciation was Rs.110.12 per share.

<Answer
≥

The working capital increased by Rs.7 per share. Management wanted its financial risk to be limited, so it maintained a debt ratio of 12%. Calculate the free cash flow for equity (FCFE).

- (a) Rs.26.03
- (b) Rs.25.52
- (c) Rs.24.20
- (d) Rs.23.32
- (e) Rs.22.60.

22 Which of the following statements is/are **true** with respect to Price Earning Growth (PEG) ratio?

[<Answer](#)
[≥](#)

- I. If the PEG ratio is less than one, it is a sign of possibly undervalued stock or the market does not expect the company to achieve the earnings growth that is reflected in the market estimates.
 - II. Value stock usually has a PEG ratio more than one.
 - III. PEG ratio is particularly helpful in valuing small and mid-cap growth stocks, which typically pay no dividend.
 - IV. A positive relationship exists between the PEG ratio and subsequent rate of return on the stock.
- (a) Only (I) above
 - (b) Only (II) above
 - (c) Only (IV) above
 - (d) Both (I) and (III) above
 - (e) Both (II) and (III) above.

23 The cost of capital of Biotouch Ltd. is 16% with a projected equity earnings growth rate of 7.5%. The market value of debt is Rs.72 lakh. The total value of the equity for the firm is Rs.170 lakh and the debt amounts to Rs.72 lakh Free cash flow to firm for the current year is

[<Answer](#)
[≥](#)

- (a) Rs.19.13 lakh
- (b) Rs.16.89 lakh
- (c) Rs.14.74 lakh
- (d) Rs.12.45 lakh
- (e) Rs.11.23 lakh.

24 Which of the following statements is **true** with respect to the returns associated with a stock?

[<Answer](#)
[≥](#)

- (a) Securities with negative alpha have above normal returns
- (b) Securities which plot above the ex-post SML generate below normal returns for their risk
- (c) Characteristic line represents a normal trade-off between risk and return for a group of security
- (d) Alpha represents the amount by which a security's return differs from the normal return for its level of risk
- (e) The x-axis for the SML represents the expected returns of a particular security.

25 Which of the following statements is/are **true** of growth industries?

[<Answer](#)
[≥](#)

- I. They are considered to be most likely to benefit from a period of economic prosperity and most likely to suffer from a period of economic slowdown.
 - II. They are hurt least in periods of economic slowdown.
 - III. During economic slowdown their earnings might very well expand while the earnings of other industries decline.
 - IV. They are generally characterized by expectation of abnormal returns, often independent of business cycle.
- (a) Only (I) above
 - (b) Only (II) above
 - (c) Only (III) above
 - (d) Only (IV) above
 - (e) Both (III) and (IV) above.

26 Business firms in their pursuit of growth, engage in a broad range of restructuring activities. The term 'split-up' involves which of the following activity?

[<Answer](#)
[≥](#)

- (a) Distribution of shares to the existing shareholders of the parent company
- (b) Sale of a portion of the firm through an equity offering
- (c) Sale of a portion of the firm to an outside third party in consideration of cash or equivalent
- (d) Broking up the entire firm in series of spin-offs
- (e) An agreement of providing certain resources to achieve the business goal.

27 Leveraged buyouts can be divided into following three categories depending on the probable mechanism for debt repayment and the realization of value to equity: <Answer>
≥

- I. Bust-up LBOs.
- II. Cash Flow LBOs.
- III. Selective Bust-up/Cash Flow LBOs.

Which of the aforementioned kind of LBOs involves the purchase of a fairly diversified company and the subsequent divestiture of selected units to retire a portion of the acquisition debt?

- (a) Only (I) above
- (b) Only (II) above
- (c) Only (III) above
- (d) Both (I) and (II) above
- (e) Both (I) and (III) above.

28 Sonata Ltd., offered Employee Stock Option Plan (ESOP) to its permanent employees and it was priced at Rs.130 per share of face value Rs.10 each. Which of the following statements is **not true** with respect to ESOPs? <Answer>
≥

- (a) It reduces the tax burden for smaller companies
- (b) It is involved in mergers and LBOs as a financing vehicle for the acquisition of companies
- (c) It is an incentive for employees to become more productive
- (d) It acts as an anti take over defense
- (e) It reduces the amount of capital to the company.

29 Which of the following statements is/are **true** with respect to auction market? <Answer>
≥

- I. In auction market, active market makers do not exist and demand and supply of the securities is directly related to the transaction price.
 - II. In market order, the price is determined by the maximum price, which a customer is willing to give or the minimum price at which the customer is willing to sell the share.
 - III. When bourses officials write a higher price, limit sell orders will be removed from the supply of stock and limit buy orders will be added to the demand for shares.
 - IV. In limit order system, the customer will accept the price fixed by the market.
- (a) Only (I) above
 - (b) Only (II) above
 - (c) Only (IV) above
 - (d) Both (I) and (III) above
 - (e) (I), (II) and (III) above.

30 Which of the following is **not** considered as advantage of Price-Sales ratio (P/S ratio)? <Answer>
≥

- (a) P/S ratio is never influenced by accounting methods
- (b) P/S ratio is a useful tool to examine the benefits of changes in pricing policy and other corporate decisions
- (c) P/S ratio can never be negative unlike P/E and P/BV ratios
- (d) Firms with low profit margins and high P/S ratio are undervalued
- (e) P/S ratio is useful for valuing companies even with no dividends at all.

END OF SECTION A

Section B : Problems/Caselet (50 Marks)

- This section consists of questions with serial number 1 – 6.
- Answer all questions.
- Marks are indicated against each question.
- Detailed workings/explanation should form part of your answer.
- Do not spend more than 110 - 120 minutes on Section B.

1. Consider the following data pertaining to two companies: <Answer>

Company/Market	Beta	Variance (%) ²	Covariance with Sensex (%) ²
Fashion Ltd.	?	1024	210

Passion Ltd.	1.30	1444	?
Sensex	1.0	400	

Assuming that the theory of regression line holds good and the risk-free interest rate is 7% p.a., you are **required** to find

- a.
 - i. Beta of Fashion Ltd.
 - ii. Covariance of return on Passion Ltd. with that of return on Sensex. **(2 marks)**
 - b. The coefficient of correlation between the returns on:
 - i. Fashion Ltd. and Sensex.
 - ii. Passion Ltd. and Sensex. **(2 marks)**
 - c. The variance of portfolio formed using Fashion Ltd. and Passion Ltd. in the proportion of $\frac{3}{4}$ and $\frac{1}{4}$ respectively. **(3 marks)**
 - d. Whether the unsystematic risk of the portfolio is less than individual companies? **(3 marks)**
2. Rahul Textiles is a major player in the textile industry of the country. The industry is expected to maintain high growth for a period of 5 years after which it is expected to drop down. Currently the company is distributing 35% of its profit as dividend to shareholders. The dividend payout ratio of the company is expected to remain at the current level for a period of next 5 years after which it is expected to increase to 50%. The net profit margin of the company is currently 8.5% and is expected to remain at the same level for next 5 years, after which it is expected to decrease to 6%. Currently the company is able to generate sales of Rs.2.50 for every 1 rupee of assets employed and it is expected to remain the same for the next 5 years, and after that the company is expected to generate sales of Rs.3.50 for every 1 rupee of assets employed. 50% of the assets of the company are financed with equity capital, and it is expected to remain same in the future. At present the risk-free rate of return is 7% and market risk premium is 15.5%. The beta of the company is currently 1.2. Current net worth of the company is Rs.280 lakh and number of shares outstanding is 2 lakh. [<Answer>](#)
- Assuming that the market is in equilibrium, you are **required** to compute:
- a. Price per share of the company using Dividend Discount Model (DDM). **(7 marks)**
 - b. Price to book value ratio of the share of the company. **(1 mark)**
3. Alpha Inc. and Beta Inc are two firms manufacturing gearboxes for two wheelers. The two firms are contemplating a merger. Alpha Inc. intends to issue just enough number of shares to ensure that the earnings per share of the merged firm is Rs.5.5 [<Answer>](#)
You are **required** to:
- a. Complete the table given below and also show the workings.

	Alpha Inc.	Beta Inc.	Merged firm
Price per share	Rs.40	Rs.36	?
Price-earnings ratio	?	?	?
Total earnings	Rs.4,50,000	Rs.5,25,000	?
Total market value	Rs.40,00,000	Rs.45,00,000	?

(6 marks)
 - b. Determine the rate of exchange of the shares. **(2 marks)**
 - c. Estimate the cost incurred by Alpha Inc. if, as a result of the merger, the synergy is Rs.28,00,000. **(2 marks)**
4. Mr. Brij Kapoor is a young analyst who is encouraged by the performance of Shrishti Labs. He discovered that announcement regarding approval of a patent right has induced a sharp interest in the scrip. To check the market efficiency in semi strong form in the above case, Mr. Kapoor has collected the following relevant information: [<Answer>](#)

Month	Closing Price of Shrishti Labs (Rs.)	Closing Value of Market Index
September 2007	125.25	17,291.10

(8 marks)

October 2007	135.25	19,837.99
November 2007	145.25	19,363.19
December 2007	156.75	20,286.99
January 2008	136.75	17,648.71
February 2008	175.25	17,578.72
March 2008	205.25	15,644.44
April 2008	225.25	17,287.31
May 2008	215.25	16,415.57
June 2008	200.20	15,395.82

Further using the data for 3 previous years, the characteristic line arrived by Mr. Kapoor is

$$r_{(s,t)} = 4.52 + 0.78r_{(m,t)}$$

Where $r_{m,t}$ is % monthly return on market in any month t

$r_{s,t}$ is % monthly return on Shrishti stock in the same month t

You are **required** to conduct the residual analysis to test semi-strong form of market efficiency.

Caselet

Read the caselet carefully and answer the following questions:

5. In perfect capital market, a firm's economic value should remain unchanged because stock split simply divides the 'corporate pie' into more pieces. Yet many empirical studies show that stock splits are associated with real economic effects. In this context, discuss various reasons behind stock split and its implications. (8 marks) [<Answer>](#)
6. A lot of misuse of stock splits has been seen in the past. Apart from misuse, a stock split may have certain effects that may not be investor friendly and also may be adverse to shareholder's value creation. In this context, explain the limitations of stock split. (6 marks) [<Answer>](#)

A stock split simply involves a company altering the number of its shares outstanding and proportionately adjusting the face value of each share. The balance sheet items remain same except that the total number of outstanding shares of the company increases proportionately to the ratio of split. After a two for one split, each shareholder has twice as many shares, but each represents a claim on only half as much of the corporation's assets and earnings.

Splits can occur at any ratio. The most commonly used ratios are 2:1, 3:2, 5:4 and 4:3. But they can happen in any way-5:1, 10:9 etc. Also they can happen in reverse i.e., 1:10 which is called Reverse Split.

A stock split does affect the intrinsic value or total funds of shareholders. Theoretically, it is a non-event. That is because the company's net assets do not increase; only the amount of its outstanding shares goes up. The fraction of the company that each share represents is reduced, but each stockholder is given enough shares so that his/her total share of the cake remains the same. It is like giving one the same amount of cake but in smaller pieces. We can rephrase this in pure financial terms as, 'A stock split will not affect market capitalization'.

After the declaration date of a stock split, the next relevant date occurring several days later is the record date. The record date of a stock split occurs after the ex-date. The record date is the payable date, on which the corporation distributes the new shares. On the ex-date the new stock replaces the un-split stock in trading. On the ex-date and thereafter, the only market is in the post-split shares. Generally, there is no delivery period for a few days after the ex-date to allow the shareholders to get shares post-split.

An opposite phenomenon of stock split is reverse stock split. Consolidation of face value through a reverse split is also possible. The face value of shares is increased and the number of shares is reduced proportionately. The announcement of a reverse split has been found to elicit a negative stock market response. Possible

motives behind the adoption of reverse splits are: 1) a desire to move the share price to an optimal trading range, 2) a reduction in shareholder servicing cost, and 3) improvement of the stock's image among the investors.

There is a stigma attached to doing this, so it is not initiated unless there is a very good reason. A reverse split can boost the share prices of companies that are traded below a minimum rate, but the effect is temporary as the fundamental factors that trashed these stocks still apply. A notable difference between stock split and reverse split is that, while regular splits may be ends in themselves as vehicles to correct stock undervaluation, reverse splits do not aim at signaling firm value, but moving share prices to a more attractive trading range. The information quality of reverse split is likely inadvertent and only a by-product of their original purpose. This point may explain why firms voluntarily send a negative signal about firm value to the market through a reverse split. Moreover, with fewer shares outstanding, unscrupulous managements will find it easier to manipulate the share prices.

It is possible that a reverse stock split could be used as the tactic to reduce the number of shareholders. Hypothetically, in a one for hundred reverse split, an investor holding less than hundred shares will simply receive a cash payment and no shares of stock. If the resulting number of shareholders dropped below some threshold, it may be placed into a different regulatory category. Reverse split is not common among Indian companies.

END OF CASELET

END OF SECTION B

Section C : Applied Theory (20 Marks)

- This section consists of questions with serial number 7 - 8.
- Answer all questions.
- Marks are indicated against each question.
- Do not spend more than 25 -30 minutes on Section C.

7. Rivalry in some industries is characterized by such phrases as 'warlike', 'bitter', or 'cut-throat' whereas in other industries it is termed 'polite' or 'gentlemanly'. Intense rivalry is the result of a number of interacting structural factors. In this context, throw light on factors that contribute to intense rivalry.

[<Answer>](#)

(10 marks)

8. A moving average is a summary measure of price movement. Technical analysts observe moving averages more for 'crossovers' (price chart over moving average or vice versa) than for the changes in directions and obtain buy-sell signals. Discuss the important principles useful in this regard.

[<Answer>](#)

(10 marks)

END OF SECTION C

END OF QUESTION PAPER

Suggested Answers

Equity: Analysis & Valuation (CFA610) : October 2008

Section A : Basic Concepts

Answer

Reason

1. D The general movement of stock market is usually measured by indices. Generally, [< TOP >](#)
indices are used to indicate the broad movements in the securities market. Hence, statement (d) is correct.
The growth in the secondary market can be measured through the movement in indices. Hence, statement (a) is not correct. As Indices are the tools to help and analyse the movement of prices of various stocks listed on the stock exchanges, they cannot indicate the quantum of investments by different investors. Hence, statements (b) and (c) are not correct. Indices show the movement of market but do not predict the prices of the share. Hence, they do not help in finding out the gain or loss from investment in a particular security. Thus, statement (e) is not correct.
2. D Average duration of unemployment, average prime rate charged by banks and [< TOP >](#)
commercial and industrial loans outstanding are the lagging indicators, as they do not have any forecasting abilities. Change in index of labor cost per unit of output is also lagging indicator but initial claims for unemployment insurance can be used to forecast the future employment position and hence is a leading indicator. Therefore, option (d) is the answer.
3. A Volume is very high at the left shoulder and continues to rise, albeit at a lower rate at [< TOP >](#)
the head. Hence, option (a) is false.
4. C The exponent for the 100-day EMA is $2/100 = 0.02$ [< TOP >](#)
Difference in EMA = $(84 - 73) \times (0.02) = 0.22$
100 day EMA for day 3 = $73.00 + 0.22 = \text{Rs.}73.22$
5. D Pioneering stage may offer the highest potential returns, but also offers the greatest [< TOP >](#)
risk. Several companies in a particular industry will fail, or do poorly. Many investors wish or avoid risk at this stage. Statement (a) is true.
The second stage, the expansion stage is of most interest to the investors. Growth is rapid but orderly for the companies in the expansion stage. This characteristic in the expansion stage is more appealing to the investors. Statement (c) is true.
The investors interested primarily in the capital gains avoid stabilization stage. Companies may have high dividend payouts in the maturity stage. Companies do not experience significant growth in the stabilization stage. Statements (b) and (e) are true and statement (d) is not true.
Hence, option (d) is the answer.
6. C As per the efficient market hypothesis the efficiency of the stock market is tested. [< TOP >](#)
Under the hypothesis it is assumed that information regarding expected return is discounted in the market and the shares sell at their fair market value and equilibrium rate of return prevail. Then it talks about the forms of efficiency and possibility of earning abnormal return by the investor. In no circumstances it says that positive return cannot be earned. As per only the semi-strong form of efficiency market prices reflect all publicly available information concerning past trading as well as fundamental aspects of the firm.
7. B Stock splits, stock dividends, bonus issues, as well as reverse stock split do not [< TOP >](#)
change the level of shareholder's equity (i.e., paid up capital and reserves). Only cash dividend on earnings is paid out and reserves of the shareholder's equity. It leads to reduction in owner's equity at any given point of time.
8. B [< TOP >](#)
$$\text{Conversion parity price of stock} = \frac{\text{Bond Price}}{\text{No. of shares on conversion per warrant}} = \frac{100}{11} = \text{Rs.}9.09$$

9. E SML typically represents the average or normal trade-off between risk and return for [< TOP >](#)
a group of securities, where risk is measured, in terms of the securities betas.
Statement (a) is true.
The amount by which a security's return differed from the normal return for its level
of risk is simply the vertical distance of the security's plot on the graph from the
SML. Statement (b) is true.
Ex-post SMLs are used to evaluate the performance of portfolio managers and to test
the validity of CAPM. Statements (c) and (d) are true.
The slope of the characteristic line (not SML) is the beta for the particular security
involved. Therefore statement (e) is not true. Hence, option (e) is the answer.
10. C The beta of the portfolio consisting of two securities given that money is allotted [< TOP >](#)
equally between the two assets = $1.1 \times 0.5 + 1.2 \times 0.5 = 1.15$

The systematic risk of a portfolio = $\beta^2 \sigma_m^2$
Substituting the values, we get
 $(1.15)^2 \times 400 = 529(\%)^2$. Hence, option (c) is the correct answer.
11. D Statement II is incorrect. A PFC does not measure every movement in price. PFC [< TOP >](#)
records changes in prices that are larger than a specific amount. All other statements
are true with respect to Point and Figure Chart. Therefore, option (d) is the correct
answer.
12. A Expected Market price = $P/E \times EPS = 12 \times 10 = 120$ [< TOP >](#)

$$\frac{2 + (120 - 90)}{90} = \frac{32}{90} = 0.3555 \text{ i.e. } 35.56\%.$$
13. D Labour intensive, capital intensive, learning curve and economies of scale are natural [< TOP >](#)
entry barriers, and control over raw material, licencing policy of government, control
over technology and control over market through strong brand equity are artificial
entry barriers.
Hence, option (d) is the answer.
14. E All market orders are day orders only and provide immediate liquidity to the market, [< TOP >](#)
and the investor is unaware of the price at which the stock will be traded.
Open orders are also known as "good till cancelled" orders.
A stop order to sell becomes a market order if the market price goes below the spot
order price.
In a stop limit order to buy, the investor can specify the maximum price that he is
ready to pay for the stock.
Hence, option (e) is the correct answer.
15. E [< TOP >](#)
$$P_0 = \frac{D_0(1+g)}{k-g} = 65.50$$

$$= \frac{3.5(1+0.12)}{k-0.12} = 65.50$$

$$= 3.92/65.5 = k-0.12$$

$$0.0598 = k - 0.12$$

$$K = 17.98\%$$
16. B Momentum is used to identify the trend reversal before it takes place. [< TOP >](#)
Therefore, option (b) is the correct answer.
17. B Runaway gaps occur when prices are on a rapid uptrend or downtrend. They generally [< TOP >](#)
occur almost halfway through a trend, and are also called measuring gaps.
Hence, option (b) is the answer.

18. E Gross profit margin ratio shows the profits relative to sales after the direct production costs are deducted. Statement (a) is true. [< TOP >](#)
- Net profit margin ratio indicates the firm's capacity to face the adverse economic conditions such as price competition, low demand, etc. Statement (b) is true.
- Earning power is a measure of operating profitability. It is a measure of the operating business performance, which is not affected by interest charges and tax payments. As it does not consider the effects of financial structure and tax rate, it is well suited for inter-firm comparisons. Statement (c) is true and statement (e) is not true.
- Return on equity measures the profitability of equity funds invested in the firm. Statement (d) is true.
- Hence, option (e) is the answer.
19. D In price-driven market, the dealer has the risk of being picked off by not updating the quotes. In order driven market, there is a danger in placing the order due to the absence of well developed markets. Therefore, option (d) is not true. All other statements are correct. [< TOP >](#)
20. B
$$\frac{D_o [(1+g_n) + H(g_a - g_n)]}{r - g_n}$$
 [< TOP >](#)
- According to H-model $P_o =$
- $$= \frac{D_o (1+g_n)}{r - g_n} + \frac{D_o H(g_a - g_n)}{r - g_n}$$
- = Value base on normal growth rate + Premium due to abnormal growth rate
- $$\frac{D_o H(g_a - g_n)}{r - g_n} = \frac{3.00 \times 3 \times (0.08 - 0.04)}{0.125 - 0.04}$$
- $$= \frac{9 \times 0.04}{0.085} = \text{Rs. } 4.235$$
- Therefore, option (b) is the correct answer.
21. E $\text{FCFE} = \text{Net Income} - (1-b)(\text{CAPEX}-\text{Depreciation}) - (1-b)(\text{Change in Working Capital})$ [< TOP >](#)
- $$= 72.65 - (1-0.12)(160-110.12) - (1-0.12)(7)$$
- $$= 72.65 - 43.89 - 6.16$$
- $$= \text{Rs. } 22.60$$
22. D Statement I and III are correct. Value stocks usually have a PEG ratio less than one because the stock's earnings expectations have risen and the market has not yet recognized the growth potential. Thus statement II is incorrect. An inverse relationship exists between the PEG ratio and subsequent rate of return on the stock. Statement IV is also incorrect. [< TOP >](#)
- Therefore, option (d) is the correct answer.
23. A Value of firm = Value of equity + Value of debt [< TOP >](#)
- $$= \text{Rs. } 170 \text{ lakh} + \text{Rs. } 72 \text{ lakh} = \text{Rs. } 242 \text{ lakh}$$
- According to the constant growth valuation model
- $$V_0 = (\text{FCFF})_1 / (K - g)$$
- Where $\text{FCFF}_1 = \text{FCFF}_0 (1 + g)$
- $$V_0 = \text{FCFF}_0 \times 1.075 / (0.16 - 0.075)$$
- $$V_0 = \text{FCFE}_0 \times 1.075 / 0.085 = \text{Rs. } 242 \text{ lakh}$$
- $$\text{FCFE}_0 \times 1.075 = \text{Rs. } 20.57 \text{ lakh.}$$
- $$\text{FCFE}_0 = 19.13 \text{ lakh.}$$

24. D Securities with positive alpha have above normal returns and those with negative [< TOP >](#) alpha have below normal returns. Statement (a) is not true.
 Securities which plot above the ex-post SML generate above normal returns for a given beta and securities which plot below the ex-post SML generate below normal return for the given systematic risk. Statement (b) is not true.
 Security market line represents a normal trade-off between risk and return for a security. Statement (c) is not true.
 The x-axis for the SML represents the betas for different securities and the Y-axis represents their expected returns. Statement (e) is not true.
 Alpha represents the amount by which a security's return differs from the normal return for its level of risk. Statement (d) is true.
25. D The growth industries provide above normal returns independent of business cycle [< TOP >](#) and the conditions of the economy does not affect the sales and earnings of the growth industries. Hence, option (d) is the correct answer.
26. D Distribution of shares to the existing shareholders of the parent company happens in [< TOP >](#) spin-off and sale of a portion of the firm through an equity offering in equity carve-out. Broking up the entire firm in series of spin-offs is split-ups. Sale of a portion of the firm to an outside third party in consideration of cash or equivalent is divestiture. An agreement of providing certain resources towards achievement of particular common business goal is joint venture
 Therefore, only option (d) is true with respect to split-ups.
27. C Bust-Up LBOs: LBOs of this kind depend on the sale of assets of the acquired [< TOP >](#) company to generate returns for the equity investors.
 Cash Flow LBOs: Cash flow LBOs is a second category of leveraged buyout which is most common in management led transactions that requires repayment of acquisition financing through the operating cash flows.
 Selective Bust-up/Cash Flow LBOs (Hybrid): It involves the purchase of a fairly diversified company and the subsequent divestiture of selected units to retire a portion of the acquisition debt.
28. E An Employee Stock Option Plan is a mechanism whereby a corporation can make a [< TOP >](#) tax deductible contribution of cash or stock into a trust. These stocks are allocated to employees and are not taxed until withdrawn by them. It does not reduce the amount of capital to the company. ESOPs are involved in mergers and LBO's as a financing vehicle for the acquisition of companies and as an anti take over defense.
 Hence, the alternative (e) is not true.
29. D In limit order system, the price is determined by the maximum price which a [< TOP >](#) customer is willing to give or the minimum price at which the customer is willing to sell the share. In market order, the customer will accept the price fixed by the auction. In auction market, active market makers do not exist and demand and supply of the securities is directly related to the transaction price. When bourses officials write a higher price, limit sell orders will be removed from the supply of stock and limit buy orders will be added to the demand for shares to have an equilibrium price.
 Therefore, option (d) is the answer.
30. D All the statements are true except statement (d), as firms with low profit margins and [< TOP >](#) high P/S ratio are not always undervalued. Hence, option (d) is the answer.

Section B : Problems/Caselet

1. [< TOP >](#)
- a. i. Beta of Fashion Ltd. =
$$\frac{\text{Cov}_{(\text{Fashion}, M)}}{\text{Var}_{(M)}}$$
- $= \frac{210}{400} = 0.525 \text{ i.e. } 0.53$
- ii. $\text{Cov}_{(\text{Passion}, M)}(\%)^2 = \beta_{\text{Passion}} \times \text{Var}(M)$
 $= 1.30 \times 400$

$$= 520(\%)^2$$

$$\begin{aligned} \text{b. i. } \rho_{\text{Fashion},M} &= \frac{\text{Cov}_{(\text{Fashion},M)}}{\sigma_{\text{Fashion}} \times \sigma_M} \\ &= \frac{210}{32 \times 20} = 0.3281 = 0.33 \end{aligned}$$

$$\begin{aligned} \text{ii. } \rho_{\text{Passion},M} &= \frac{\text{Cov}_{(\text{Passion},M)}}{\sigma_{\text{Passion}} \times \sigma_M} \\ &= \frac{520}{38 \times 20} = 0.6842 = 0.68 \end{aligned}$$

$$\text{c. Variance of the portfolio} = W_F^2 \sigma_F^2 + W_P^2 \sigma_P^2 + 2W_F W_P \text{Cov}_{(F,P)}$$

$$W_{\text{Fashion}} = \frac{3}{4} = 0.75$$

$$W_{\text{Passion}} = \frac{1}{4} = 0.25$$

From, the assumptions of characteristic line, we get

$$\begin{aligned} \text{Cov}_{(\text{Fashion}, \text{Passion})} &= \beta_{\text{Fashion}} \times \beta_{\text{Passion}} \times \text{Var}_{(M)} \\ &= 0.53 \times 1.30 \times 400 \\ &= 275.6(\%)^2 \end{aligned}$$

$$\begin{aligned} \text{Variance of the portfolio} &= (0.75)^2 \times (32)^2 + (0.25)^2 \times (38)^2 + 2 \times 0.75 \times 0.25 \times 275.6 = \\ &769.6(\%)^2 \end{aligned}$$

$$\begin{aligned} \text{d. Unsystematic risk of Fashion Ltd} &= (1 - \rho_{\text{Fashion},M}^2) \sigma_{\text{Fashion}}^2 \\ &= (1 - 0.33^2) 1024 \\ &= 912.49(\%)^2 \\ \text{Unsystematic risk of Passion Ltd} &= (1 - \rho_{\text{Passion},M}^2) \sigma_{\text{Passion}}^2 \\ &= (1 - 0.68^2) 1444 \\ &= 776.29(\%)^2 \end{aligned}$$

Alternate method:

$$\text{Unsystematic risk of Fashion Ltd} = \sigma_{\text{Fashion}}^2 - \beta^2 \sigma_M^2 = 911.64(\%)^2$$

$$\text{Unsystematic risk of Passion Ltd} = 768(\%)^2$$

$$\begin{aligned} \text{Beta of the portfolio} &= W_E \beta_E + W_D \beta_D \\ &= (0.75 \times 0.53) + (0.25 \times 1.30) \\ &= 0.7225 \end{aligned}$$

$$\begin{aligned} \rho_{\text{Port},M} &= \frac{\text{Cov}_{(\text{Port},M)}}{\sigma_{\text{Port}} \times \sigma_M} \\ &= \beta_{\text{Port}} \times \frac{\sigma_M}{\sigma_{\text{Port}}} \\ &= 0.7225 \times \frac{20}{\sqrt{769.6}} = 0.52 \end{aligned}$$

$$\begin{aligned} \text{Unsystematic risk of the portfolio} &= (1 - \rho_{\text{Port},M}^2) \sigma_{\text{Port}}^2 \\ &= (1 - 0.52^2) 769.6 \end{aligned}$$

$$= 561.50(\%)^2$$

Therefore, the unsystematic risk of the portfolio is less than that of individual stocks. It implies that unsystematic risk reduces with the constitution of portfolio.

2. a.

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Particulars	Next 5 years	After 5 th year
Pay-out ratio	35%	50%
Net profit margin (a)	8.5%	6%
Asset turn over ratio (b)	2.50	3.50
NW/TA (c)	50%	50%
ROE = (a x b) / (c)	42.5%	42%
Growth rate (6) = (1 - Payout ratio) x ROE	27.63%	21%

Calculation of price per share:

Year	Growth rate (%)	DPR (%)	EPS	DPS
0	27.63	35	59.50	
1	27.63	35	75.94	26.58
2	27.63	35	96.92	33.92
3	27.63	35	123.70	43.30
4	27.63	35	157.88	55.26
5	27.63	35	201.50	70.53
6	21	50	243.82	121.91

Calculation of Current EPS of the company:

$$\text{ROE} = \text{PAT}/\text{NW}$$

$$0.425 = \text{PAT}/280 \text{ lakh}$$

$$\text{PAT} = 0.425 \times 280 \text{ lakh}$$

$$\text{PAT} = \text{Rs.}119 \text{ lakh}$$

$$\text{EPS} = \text{PAT}/\text{No. of shares outstanding}$$

$$= 119 / 2 \text{ lakh}$$

$$= \text{Rs.}59.5$$

$$\text{Calculation of Cost of equity} = K_e = R_f + \beta (R_m - R_f)$$

$$= 7 + 1.2 (15.5)$$

$$= 25.6\%$$

$$\text{Terminal value at the end of 5th year} = 121.91 / (0.256 - 0.21) = \text{Rs.}2650.22 \text{ lakh}$$

$$\text{Value of share at time '0'} = \frac{26.58}{1.256} + \frac{33.92}{1.256^2} + \frac{43.30}{1.256^3} + \frac{55.26}{1.256^4} + \frac{70.53 + 2650.22}{1.256^5} = \text{Rs.}957.17$$

b. Book value per share of ABC Ltd. = Net worth/ No. of shares outstanding

$$\frac{280}{2}$$

$$= 140 = \text{Rs.}140$$

$$\text{Therefore, price to book value ratio} = 957.17 / 140 = 6.84.$$

3. a. Total market value = Rs.40,00,000 + Rs.45,00,000 = Rs.85,00,000

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$$\text{Total earnings} = 4,50,000 + 5,25,000 = \text{Rs.}9,75,000$$

$$\text{Earnings per share of the merged firm is Rs.}5.5$$

$$\text{Therefore, the number of shares outstanding in merged firm} = 9,75,000 / 5.5 = 1,77,273$$

$$\text{The market price per share is Rs.}47.95 \text{ i.e. } (85,00,000 / 1,77,273)$$

$$\text{No. of shares outstanding in Alpha Inc} = 40,00,000 / 40 = 1,00,000$$

$$\text{No. of shares outstanding in Beta Inc} = 45,00,000 / 369 = 1,25,000$$

$$\text{EPS of Alpha Inc} = 4,50,000 / 1,00,000 = \text{Rs.}4.5$$

$$\text{EPS of Beta Inc} = 5,25,000 / 1,25,000 = \text{Rs.}4.2$$

$$\text{P/E of Alpha Inc.} = 40 / 4.5 = 8.89$$

$$\text{P/E of Beta Inc.} = 36 / 4.2 = 8.57$$

$$\text{P/E ratio of the merged firm} = 8.72 \text{ i.e. } (47.95 / 5.5)$$

(Rs.)

	Alpha Inc.	Beta Inc.	Merged firm
Price per share	40	36	47.95
Price-earnings ratio	8.89	8.75	8.72
Total earnings	4,50,000	5,25,000	9,75,000
Total market value	40,00,000	45,00,000	85,00,000

- b. Number of shares outstanding = Total Earnings / Earnings per share
Alpha Inc. has to issue 77,273 i.e. $(1,77,273 - 1,00,000)$ additional shares in order to takeover Beta Inc. which has 1,25,000 shares outstanding.
Thus, rate of exchange of shares = $77,273/1,25,000 = 0.618$ i.e. 0.62
0.62 shares of Alpha Inc. were exchanged for each share of Beta Inc.
Thus the exchange ratio = 0.62
- c. Alpha Inc. paid a total of Rs.37,05,240 i.e. $(77,273 \times 47.95)$.
The synergy is expected to worth Rs.28,00,000.
Thus, the cost of acquisition is $37,05,240 - 28,00,000 = \text{Rs.}9,05,240$.

4.

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Months (I)	Actual Return on stock (%) (II)	Return on Index (%) (III)	Expected return on stock using characteristic line (IV)	Above normal return % (V) = (II) – (IV)
September 2007			–	
October 2007	7.984	14.729	16.009	–8.025
November 2007	7.394	–2.393	2.653	4.741
December 2007	7.917	4.771	8.241	–0.324
January 2008	–12.759	–13.005	–5.624	–7.135
February 2008	28.154	–0.397	4.211	23.943
March 2008	17.118	–11.004	–4.063	21.181
April 2008	9.744	10.501	12.711	–2.967
May 2008	–4.440	–5.043	0.587	–5.026
June 2008	–6.992	–6.212	–0.325	–6.666
Σ Above normal return =				19.72

From the above computation it can be observed that sum of abnormal return is not close to zero. Therefore, it can be concluded that market is not efficient in semi-strong form.

5. Reasons behind stock split and its implications:

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- **Makes shares more affordable to individual investors**

The main advantage is that a stock split helps to broaden the shareholder base by making the shares more affordable. This tends to increase demand for the stock which results in a slightly higher share price. It often improves sentiment for the stock. It drives the new share price up as more of the investing public is attracted by the new share price.

A company might split its stock when it feels that its share price has risen beyond what an individual investor is willing to pay, especially when the shares are bought and sold in marketable lots. Even when the shares are traded in demat mode, where even one share may be traded, the price may be high enough to discourage the small investors.

- **Increases depth**

A stock split increases the number of shares outstanding, so the depth in the stock increases. Large block holders, in addition to being efficient monitors also facilitate takeover activities. By increasing the dispersion in the share base it secures the company from the threat of potential takeover.

- **Increases liquidity**

Another reason for frequently offered stock split is that it increases liquidity. It is an important motivation for the decision to lower share prices. Firms split shares to improve their liquidity. Because the number of shares increases, the amount that the investors are willing to buy or sell also goes up.

- **Reduction in institutional ownership**

Companies sometimes want to attract individuals to stabilize the price, as institutional investors buy and sell more frequently than individuals. By reducing the fraction of shares

owned by institutional investors, the firms will lower the incentive of these investors to monitor management. That's yet another reason for split. However, it remains an issue, whether reduction in institutional ownership would enhance shareholder's value.

- **Information content:**

Stock split has a positive effect on the price. Over the long-term, stock splits seem to have a considerable effect on the company's stock price. Stock splits reveal information about future dividend and earnings changes. It is found that analysts use the split factor to revise their estimates of the firm's earnings. These results coupled with the findings of a positive relation between the split announcement period returns and future earnings changes indicate that investors view stock split announcements as containing valuable information. However, this signaling hypothesis can only be valid if false signaling incurs a cost. A split imposes costs on current shareholders of the firm since each old share is not replaced with an integral number of new shares. Thus, the investors who previously owned round lots find themselves with more expense to sell odd lots. But odd lot problem would not arise when shares are traded in demat mode and no lot size is specified.

- **Optimal price range**

Companies try to keep their stocks within an optimal price range. Stocks traded in this range are presumed to have lower brokerage fees and appear to be more liquid as the number of shareholders might increase. As the share price overflows this trading range, the trading cost, price stability and the liquidity of the stock change, so the marketability of the stock can deteriorate. Moreover, there could also be behavioral and cognitive factors according to which managers expect the marketability of their shares to reduce as the stock price is set far away from the industry average. Therefore, when the stock hits the company's price targets, the company upon approval of the Board of Directors and the shareholders will announce a stock split.

- **Tax-shield**

Capital market players who want to book capital losses for tax purposes, trigger 'buy' orders after the split. During boom time, brokers and investors make sizeable profits. If they want to avoid paying taxes on these gains then the stock split is a good opportunity to show losses in the books. The practice is to sell the original shares and keep the new shares with them. The empirical evidence that supports an increase in volatility following splits does not reject this tax option hypothesis. But in India, there are no such tax implications for stock split and it would be tax neutral.

- **Increases trading**

Apart from providing brokers and investors an opportunity to manage their tax liabilities, stock splits also spark off increased trading in scrips. Noise traders prefer low-priced stocks to high-priced stocks.

- **Better deal to investors**

Analysts say that stock split are generally resorted to by the companies in order to give its investors a better deal in terms of easier exit and entry, good valuations, returns and more over a protection from volatile swings in prices. More floating stock help iron out volatilities within a larger number of investors as the market price reduces. Infusion of higher liquidity attracts the attention of institutional investors as they are provided with better entry and exit opportunities.

6. Limitations of stock splits:

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- **Confusion among investors regarding dividends**

Indian companies generally express dividends as a percentage of the face value, rather than as a fixed sum per share as per the practice in developed markets. Investors would have to keep track on the face value to check what their dividends really are as well as to make comparisons between different stocks.

- **Reduction of institutional ownership**

Many institutional investors or mutual funds have rules against purchasing a stock whose price is below some minimum, say Rs.2. A stock split, particularly for small companies may thus reduce the holding of institutional investors or fund houses:

- **Wide dispersion in shareholder base**

As the shareholder's base increases, the number of investor holding a negligible portion of share in the company also increases.

- **Cost of split:**

The transaction cost is an inverse function of stock price. The danger of being de-listed from its stock exchange is also an added cost of stock split. Such de-listing may happen when share price drops below a minimum price.

Section C: Applied Theory

7. Factors contributing to intense rivalry:

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Slow industry growth

Slow industry growth turns competition into a market share game for firms seeking expansion. Market share competition is a great deal more volatile than is the situation in which rapid industry growth insures that firms can improve results just by keeping up with the industry and where all their financial and managerial resources may be consumed by expanding with the industry.

High fixed or storage costs

High fixed costs create strong pressures for all firms to fill capacity which often leads to rapidly escalating price cutting when excess capacity is present. Many basic materials like paper and aluminum suffer from this problem, for example. The significant characteristic of costs is fixed costs relative to value added, and not fixed costs as a proportion of total costs. Firms purchasing a high proportion of costs in outside inputs (low value added) may feel enormous pressures to fill capacity to break even, despite the fact that the absolute proportion of fixed costs is low.

Lack of differentiation or switching costs

Where the product or service is perceived as a commodity or near commodity, choice by the buyer is largely based on price and service, and pressures for intense price and service competition result. These forms of competition are particularly volatile, as has been discussed. Product differentiation, on the other hand, creates layers of insulation against competitive warfare, because buyers have preferences and loyalties to particular sellers. Switching costs, described earlier, have the same effect.

Capacity augments in large increments

Where economies of scale dictate that capacity must be added in large increments, capacity additions can be chronically disruptive to the industry supply/demand balance, particularly where there is a risk of bunching capacity additions. The industry may face recurring periods of overcapacity and price cutting.

High strategic stakes

Rivalry in an industry becomes even more volatile if a number of firms have high stakes in achieving success there. For example, a diversified firm may place great importance on achieving success in a particular industry in order to further its overall corporate strategy. Or a foreign firm may perceive a strong need to establish a solid position in the market in order to build global prestige or technological credibility. In such situations, the goals of these firms may not only be diverse but even more destabilizing because they are expansionary and involve potential willingness to sacrifice profitability.

Shifting rivalry

The factors that determine the intensity of competitive rivalry can/do change. A very common example is the change in industry growth brought about by industry maturity. As an industry matures, its growth rate declines, resulting in intensified rivalry, declining profits and (often) a shake out.

Another common change in rivalry occurs when an acquisition introduces a very different personality to an industry. Also, technological innovation can boost the level of fixed cost in the production process and rise the volatility of rivalry.

8. The following are the important principles useful while observing crossover of moving average [< TOP >](#) 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. (See points A and B in figure below.)
- ii. The price line moving average crossover has to be examined cautiously when the price

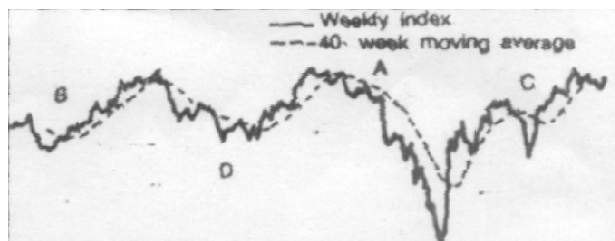
line and moving average move in opposite directions before the crossover. The price line that falls below a rising moving average only indicates a secondary reaction and need not signal a trend reversal. Similarly, a price line that rises above a falling moving average is an indication to sell. (See point C in figure below.)

- 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.

Some technicians use more than one moving average to smoothen the same price trend. This procedure smoothen the data twice, and provides warning signals for trend reversals, comparatively more quickly after they have taken place. It is common for analysts to use 100-day and 300-day averages simultaneously.

When the 100-day average moves below the declining 300-day average, a trend reversal is signaled. Multiple moving averages are useful because shorter-span averages reach the turning points earlier than the longer-span averages, and are very useful in confirming a trend reversal.

A point of caution is in order. Simple moving averages always invariably provide signals to buy or sell, after the trend reversal has begun. They are neither lead indicators, nor juncture points for change in trends. Simple moving averages, therefore, should only be used along with other indicators. In an accumulation/distribution phase, a series of crossovers can occur whether the market is moving sideways, and provide misleading signals.



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