CHAPTERS AT A GLANCE

CHAPTER 1

Learning Objectives

1. Define finance and describe its major areas—financial management/managerial finance/ corporate finance and financial services
2. Differentiate financial management from the closely-related disciplines of accounting and economics
3. Describe the scope of financial management and identify the key activities of the financial manager
4. Explain why wealth/value maximisation, rather than profit/EPS maximisation, is the goal of financial management and how economic value added (EVA) and focus on shareholders relate to its achievement and summarise the major objectives of corporate finance by Indian corporates
5. Discuss the agency problem/issue as it relates to owners wealth maximisation
6. Outline the organisation of finance function and the emerging role of finance managers in India

Chapter Structure

Section 1 Finance and Related Disciplines
Section 2 Scope of Financial Management
Section 3 Objectives of Financial Management
Section 4 Agency Problem
Section 5 Organisation of Finance Function
Section 6 Emerging Role of Finance Managers in India
Section 7 An Overview of the Book

Summary

- Financial management/corporate finance/managerial finance is concerned with the duties of the finance manager in a business firm. He performs such varied tasks as budgeting, financial forecasting, cash management, credit administration, investment analysis and funds procurement. The recent trends towards globalisation of business activity has created new demands and opportunities in managerial finance.
- Finance is closely related to both macroeconomics and microeconomics. Macroeconomics provides an understanding of the institutional structure in which the flow of finance takes place. Microeconomics provides various profit maximisation strategies based on the theory of the firm. A financial manager uses these to run the firm efficiently and effectively. Similarly, he depends on accounting as a source of information/data relating to the past, present and future financial position of the firm. Despite this interdependence, finance and accounting differ in that the former is concerned with cash flows, while the latter provides accrual-based information; and the focus of finance is on the decision making but accounting concentrates on collection of data.
- The financial management function covers decision making in three inter-related areas, namely, investment including working capital management, financing and dividend policy. The three key activities of the financial manager are **(1)** performing financial analysis;**(2)** making investment decisions and **(3)** making financing decisions.

- The goal of the financial manager is to maximise the owners/shareholders wealth as reflected in share prices rather than profit/EPS maximisation because the latter ignores the timing of returns, does not directly consider cash flows and ignores risk. As key determinants of share price, both return and risk must be assessed by the financial manager when evaluating decision alternatives. The EVA is a popular measure to determine whether an investment positively contributes to the owners wealth. However, the wealth maximising action of the finance managers should be consistent with the preservation of the wealth of stakeholders, that is, groups such as employees, customers, suppliers, creditors, owners and others who have a direct link to the firm. Corporate India paid scant attention to the goal of shareholders wealth maximisation till the eighties. In the post-liberaliastion era, it has emerged at the centre-stage of corporate financial practices, the contributory factors being greater dependence on capital market, growing importance of institutional investors and foreign exposure.
- An agency problem results when managers as agents of owners place personal goals ahead of corporate goals. Market forces and the threat of hostile takeover tend to act to prevent/minimise agency problems. In addition, firms incur agency costs in the form of monitoring and bonding expenditures, opportunity costs and structuring expenditures which involve both incentive and performance-based compensation plans to motivate management to act in the best interest of the shareholders.
- The importance of the finance function depends on the size of the firm. Financial management is an integral part of the overall management of the firm. In small firms, the finance functions are generally performed by the accounting departments. In large firms, there is a separate department of finance headed by a specialist known by different designations such as vice-president, director of finance, chief finance officer and so on.
- Reflecting the emerging economic and financial environment in the post-liberalisation era since the early nineties, the role/job of finance managers in India has become more important, complex and demanding. The key challenges are in the areas of **(1)** financial structure, **(2)** foreign exchange management, **(3)** treasury operations, **(4)** investor communication, **(5)** management control and (**6)** investment planning.

CHAPTER 2

Learning Objectives

1. Discuss the role of time value in finance particularly future (compound) value and present (discounted) value
2. Understand the concept of future value, its calculation for a single amount, compounding of interest more frequently than annually and find the future value of annuities
3. Review the concept of present value, its calculation for a single amount and determine the present value of a mixed stream of cashflows, an annuity and a perpetuity
4. Describe procedures involved in determining deposits to accumulate a future sum, loan amoratisation and finding interest on growth rates
5. Develop further aspects of application of compounding and discounting techniques, namely,effective and nominal rates of interest and discount, present value of an annuity payable monthly/quarterly/ half-yearly, and effective and flat rates of interest

Chapter Structure

Section 1 Rationale
Section 2 Techniques
Section 3 Practical Applications of Compounding and Present Value Techniques

Summary

- Money has time value. A rupee today is more valuable than a rupee a year hence. A rupee a year hence has less value than a rupee today. Money has, thus, a future value and a present value. Although alternatives can be assessed by either compounding to find future value or discounting to find present value, financial managers rely primarily on present value techniques as they are at zero time ($t = 0$) when making decisions.
- Future value relies on compound interest to measure the value of future amounts. When interest is compounded, the initial principal/deposit in one period, along with the interest earned on it, becomes the beginning principal of the following period and so on. Interest can be compounded annually, semi-annually (half-yearly), quarterly, monthly and so on. The more frequently interest is compounded, the larger the future amount that would be accumulated and the higher the effective interest rate. The interest rate formula and the basic equation for the future value of a single amount are given below:
  (i) Basic formula of compounding: $A = P(1 + i)^n$
  (ii) Compounding more than once a year: $P[1 + i/n]^{mn} = A$
  (iii) Compounded sum of an annuity: $Sn = CVIFA \times A$
- Present value represents an opposite of future value. The present value of a future amount is the amount of money today equivalent to the given future amount on the basic of a certain return on the current amount. The interest factor formula and the basic equation of the present value are given below:
  (i) Basic formula: $A[1/(1 + i)^n]$
  (ii) Present value of a series of cash flows: $= \sum_{t=1}^{N} \frac{C_t}{(1+i)^t} = \sum_{t=1}^{n} C_t (IF_t)$

(iii) Present value of an annuity: $C\left[\sum_{t=1}^{N}\frac{1}{(1+i)^t}\right]$

- The annual deposit to accumulate a given future sum can be found by solving the equation for the future value of an annuity for the annual payment. A loan can be amortised into equal payments by solving the equation for the present value of an equity for the annual payment. Interest or growth rates can be estimated by finding the unknown interest in the equation for the present value of either a single amount or an annuity.
- The effective rate of discount (d) is used in computing the present values of certain types of annuities. Symbolically, $d = \frac{i}{1+i}$
- The coupon rate of interest is called nominal rate of interest. With more frequent compounding, effective rate of interest is different from the nominal rate of interest. Symbolically,

$$i = \left[1+\frac{i^{(p)}}{p}\right]^{p} - 1 \quad \text{or} \quad i = [(1 + i)^{1/p} - 1]p$$

- A typical lease/hire-purchase contract calls for equated (level) payments to be made either in advance or in arrears at intervals less than one year. Such payments are annuity payable PTHY, where P denotes the frequency of payment such as half-yearly, quarterly and so on. Symbolically, the present value of a level annuity payable PTHLY in arrear and advance are:

$$PVIFA_p\,(i, n) = \frac{i}{i^{(p)}}\ PVIFA\,(i, n)$$

$$PVIF\bar{A}_p\,(i, n) = \frac{i}{d^{(p)}} PVIF\,(i, n)$$

- If the rate of interest is applied to the original amount of the loan, to determine the interest of each loan, we refer to the rate as the flat rate. When the rate of interest is applied to the diminishing balances of the loan amount to determine the interest content of each instalment, it is called the effective rate of interest. Symbolically, effective rate of interest/annual percentage rate (APR) is given by the following equation:

$$i = 2F\left[\frac{n}{n+1}\right] \text{ or } i = \frac{2F}{\frac{n+1}{n} + F\left(\frac{n-3m+2}{3m}\right)}$$

CHPATER 3

Learning Objectives

1. Understand the fundamentals of risk and return
2. Describe procedure for assessing and measuring the risk of a single asset
3. Review the procedure to assess and measure the risk-return of a portfolio
4. Discuss the selection of the optimal portfolio based on the Markowitz model
5. Explain the capital asset pricing model (CAPM) as a framework for basic risk-return trade-off
6. Examine the factors having a bearing on extended CAPM
7. Describe the arbitrage pricing theory (APT) as a model of security/asset pricing as an alternative to CAMP

Chapter Structure

Section 1 Risk and Return of a Single Asset
Section 2 Risk and Return of Portfolio
Section 3 Portfolio Selection
Section 4 Capital Asset Pricing Model (Capm)
Section 5 Extended Capm
Section 6 Arbitrage Pricing Theory

Summary

- Risk refers to the variability of expected returns associated with a given security or asset.
- The absolute return on an investment for a given period of time, say a year, consists of annual income plus change in the market price of the investment (capital appreciation or loss); total annual income (loss) in terms of the rate of return is expressed as a percentage of the opening market value of the investment.
- The two major concerns of an investor, while choosing a security (asset) as an investment, are the expected return from holding the security and the risk that the realised return may fall short of the expected return. Two commonly used approaches to assess risk from a behavioural point of view are sensitivity analysis and probability distribution. To obtain a more concrete measure of risk, two statistical measures of variability of return, namely, standard deviation and coefficient of variation, can be used.
- The term, portfolio refers to the collection of securities/assets held by an investor for investment purposes. The risk of a portfolio is measured in much the same way as the risk of a single asset. However, in the context of a portfolio, the risk of any single proposed investment in a security/asset is not to be viewed independent of other assets/securities already held; additional investments are considered in the light of their effect on the risk and return of the portfolios as a whole. The correlation among assets in portfolio affects the overall risk of the portfolio. The assets (or securities) whose returns are negatively correlated provides the best combination to minimise overall risk. In a way, the concept of correlation constitutes an integral part of the process of diversification that is used to develop an efficient portfolio of assets/securities. An efficient portfolio is a maximum return portfolio, at a given level of risk.

- Diversification through a combination of securities that are not perfectly positively correlated helps to reduce the overall risk of a portfolio. Total portfolio risk has two components:(i) systematic/non-diversifiable/unavoidable risk and (ii) unsystematic/diversifiable/avoidable risk. The systematic risk is caused by factors that affect all the securities/overall market. Therefore, even an investor who holds a well-diversified portfolio is exposed to this type of risk. In contrast, the unsystematic risk is unique to a particular company/industry/security. This kind of risk can be reduced by diversification and can be eliminated even completely through efficient diversification.
- The non-diversifiable risk is the only relevant risk for which the investors are to be compensated. The higher is such a risk, the higher is the required/expected return of the investor. This risk-return trade-off is the theme of the capital asset pricing model (CAPM). The non-diversifiable risk is measured by beta coefficient. The CAPM uses beta to relate a security's risk relative to the market to determine the security's/asset's required rate of return.
- The CAPM is essentially a single factor model, based on beta. It may be extended to include other variables affecting security's expected return. The major factors in this regard are: (i) taxes, (ii) inflation, (iii) liquidity, (iv) market capitalisation size and (v) price-earnings and market-to-book value ratios.
- The differential tax treatment of dividend and capital gains may affect the effective return expected from the security. Since the investors are concerned with inflation, they may require the lower return on securities which provide hedge against inflation. Likewise, the liquid securities and the securities of companies having high market capitalisation size are preferred and may require a lower return on the part of investors. Finally, it has been observed that returns tend to be higher for low price-earning (P/E) ratio securities as well as for low market-to book (M/B) ratio securities. Of these multiple variables, market capitalisation size and either the P/E ratio or M/B ratio have been observed to be the most significant in their effect on security returns.
- The Arbitrage Pricing Theory (APT) is an alternative model of asset/security pricing. The APT is based on the concept of arbitrage. By eliminating arbitrage opportunities, the arbitragers help in developing the state of capital market efficiency in which all riskless securities yield the same expected return. This apart, the theory attempts to relate the return of a security within a multivariate framework in which the return relationships are linear.

CHAPTER 4

Learning Objectives

1. Explain the basic valuation model to value bonds/debentures, preference shares and equity shares
2. Apply the basic valuation model to bonds/debentures to evaluate the relationship between both required return and time to maturity and bond values
3. Explain yield-to-maturity (YTM), its calculation and the procedure used to value bonds that pay interest semi-annually
4. Discuss the valuation of perpetual and redeemable preference shares applying the basic valuation model
5. Understand basic share valuation under each of three cases—zero growth, constant growth and variable growth
6. Discuss three other approaches—book value, liquidation value and price-earnings/multiple—that are used to estimate shares values
7. Review the relationship between the impact of financial decisions on both expected return and risk and their combined effect on the value of a firm

Chapter Structure

Section 1 Basic Valuation Model
Section 2 Valuation of Bonds/Debentures
Section 3 Valuation of Preference Shares
Section 4 Valuation of Ordinary Shares
Section 5 Other Approaches to Valuation of Shares
Section 6 Relationship Among Financial Decisions, Return, Risk and Share Values

Summary

- Valuation is the process that links risk and return to determine the worth of an asset/security. The key inputs in the valuation process are expected returns (cash flows), their timing/pattern and the risk (required return).
- The value of a security is the present/discounted value of all future cashflows associated with it over the relevant/specified period. Symbolically,

$$V = \frac{A_1}{(1+k)^1} + \frac{A_2}{(1+k)^2} + \ldots + \frac{A_n}{(1+k)^n}$$

$$= [(A_1 \times PVIF_{k,1}) + (A_2 \times PVIF_{k,2}) + \ldots\ldots\ldots + (A_n \times PVIF_{k,n})] \text{ or } = A \times PVIFA_{(k,n)}$$

- The value of a bond is the present value of the contractual payments by its issuer from the beginning till maturity. Symbolically,

$$B = I \left[\sum_{t=1}^{n} \frac{1}{(1+k_d)^d} \right] + M \times \left[\frac{1}{(1+k_d)^d} \right]$$

$$= I \times (PVIFAk_{d,n}) + M \times (PVIFk_{d,n})$$

- The value of a share is equal to the present value of all future dividends over an indefinite period of time. Symbolically,

$$P = \frac{D_1}{(1+K_e)^1} + \frac{D_2}{(1+K_e)^2} + \ldots + \frac{D_\infty}{(1+K_e)^\infty}$$

- With zero growth in dividends, $P = \frac{D_1}{K_e}$
- With constant growth in dividends, $P = \frac{D_1}{K_e - g}$
- With variable growth in dividends

$$P = \sum_{t=1}^{n} \frac{D_0 \times (1+g)^t}{(1+K_e)^t} + \left[\frac{1}{(1-K_e)^n} \times \frac{D_N + 1}{K_e - g_2} \right]$$

- In addition to the dividend approach, there are other approaches to value ordinary, shares, namely, book value, liquidation value and P/E multiples/ratio. The P/E multiple approach is the most popular in practice because, unlike the book value and liquidation value, this approach views the firm as a going concern whose value lies in its earning power rather than its asset values.
- Any action of a financial manager that increases the level of expected return without changing risk would increase share value and any action that reduces the level of expected returns without changing risk would reduce share values. Similarly, an action that increases risk will reduce value of shares and any action that reduces risk will increase share values. As most financial decisions affect both return and risk, an assessment of their combined effect on value must be part of the financial decision process.

CHAPTER 5

Learning Objectives

1. Explain the concept of cash flow statement
2. Determine cash inflows and cash outflows transactions
3. Understand the usefulness of cash flow statement
4. Explain the operating, financing and investing activities
5. Discuss adjustment of depreciation, amortisation, other non-cash expenses, non-operating expenses and incomes to determine cash flow from operating activities
6. Examine 'T' account approach to facilitate preparation of cash flow statement
7. Illustrate preparation of cash flow statement
8. Illustrate cash flow statement as per AS–3

Chapter Structure

Section 1 Meaning, Sources and Uses of Cash and its Usefulness
Section 2 Preparation of Cash Flow Statement
Section 3 As-3—Cash Flow Statement

Summary

- Cash flow statement indicates sources of cash inflows and transactions of cash outflows of a firm during a period. It is also called "Where-Got Where-Gone" statement. The statement provides answers to many important questions related to financial position of an enterprise.
- The major sources of cash inflows are cash from: (i) business operations, (ii) non-business operations (like interest, dividend etc), (iii) sale proceeds of long-term assets, (iv) raising additional share capital and (v) long-term borrowings. The principal uses of cash are: (1) purchase of long-term assets, (ii) redemption of preference shares/debentures, (iii) repayment of long-term borrowings and (iv) payment of dividends.
- Cash flow statement (CFS) is an important tool of financial analysis. It clearly highlights the firm's operating, financing and investment activities. It enables the management to assess whether the firm has adequate long-term funds to finance major fixed assets expansion.
- Preparation of cash flow statement is mandatory for all the listed companies as well as for all enterprises which have turnover of more than Rs 50 crore in a financial year.
- The CFS shows the sources and uses of cash in terms of three components: (i) operating, (ii) financing and (iii) investing activities. The cash flows from each of these categories are to be reported on net basis.
- Cash flows from operating activities result from the major revenue producing activities of a firm. Accordingly, the income statement constitutes the main source of data. The major operating items are (i) cash receipts from customers, (ii) cash paid to suppliers and employees, (iii) income-tax and (iv) proceeds from extraordinary items.
- The items included in financing activities are: (i) proceeds from issue of share capital, (ii) proceeds from long-term borrowings, (iii) redemption of preference shares/debentures, (iv) repayment of long-term borrowings and (v) payment of interest and dividend to debenture-holders/lenders and shareholders respectively.

- Cash flows representing investment activities relate to capital expenditures incurred with intent to generate future earnings as cash flows and includes: (i) purchase of new fixed assets, (ii) proceeds from sale of existing fixed assets and (iii) interest and dividend received on investments made.

CHAPTER 6

Learning Objectives

1. Understand the meaning and rationale of ratio analysis
2. Discuss and interpret liquidity ratios
3. Explain and interpret capital structure ratios
4. Analyse profitability ratios
5. Illustrate and interpret efficiency ratios
6. Identify integrated and growth ratios
7. Analyse the common size statements
8. Describe the importance and limitations of ratio analysis

Chapter Structure

Section 1 Ratio Analysis
Section 2 Common Size Statements
Section 3 Importance and Limitations of Ratio Analysis

Summary

- Ratio analysis is a widely used tool of financial analysis. It is defined as the systematic use of ratio to interpret the financial statements so that the strengths and weaknesses of a firm, as well as its historical performance and current financial condition, can be determined.
- Ratios make the related information comparable. A single figure by itself has no meaning, but when expressed in terms of a related figure, it yields significant inferences. Thus, ratios are *relative figures* reflecting the relationship between related variables. Their use as tools of financial analysis involves their comparison as single ratios, like absolute figures, are not of much use. Three types of comparisons are generally involved: namely, (i) trend analysis, (ii) inter firm comparison, and (iii) comparison with standards or industry average.
- Trend analysis involves comparison of a firm over a period of time, that is, present ratios are compared with past ratios for the same firm. The comparison of the profitability ratios of a firm, say, year 1 to year 5, is an illustration of a trend analysis. It indicates the direction of change in the performance – improvement, deterioration or constancy – over the years.
- Interfirm comparison involves comparing the ratios of a firm with those of others in the same lines of business or for the industry as a whole. It reflects the firm's performance in relation to its competitors. Other types of comparisons may relate to the comparison of items within a single year's financial statement of firm and comparison with standards or plans.
- Ratios can broadly be classified into six groups: (i) liquidity, (ii) capital structure or leverage, (iii) profitability, (iv) activity, (v) integrated and (vi) growth.
- Liquidity ratios measure the ability of a firm to meet its short-term obligations and reflect its short-term financial strength or solvency. The important liquidity ratios are (a) current ratio, and (b) quick or acid test ratio.

  Current ratio is the ratio of total current assets (CAs) to total current liabilities (CLs). A satisfactory current ratio would enable a firm to meet its obligations, even if the value of its CAs decline. It is, however, a quantitative index of liquidity as it does not differentiate among the components of CAs, such as cash and inventory which are not equally liquid.

The quick or acid test ratio takes into consideration the differences in the liquidity of the components of CAs. It represents the ratio between quick CAs and the total CLs. It is a rigorous measure and superior to the current ratio. However, both these ratios should be used as complementary to each other to analyse the liquidity position of a firm.

The main liquidity ratios are computed as follows: (i) Current ratio = Current assets/Current liabilities. (ii) Acid test ratio = (Current assets – Stock – Pre-paid expenses)/Current liabilities. (iii) Super-quick ratio = (Cash + Marketable securities)/Current liabilities.

- The capital structure or leverage ratios throw light on the long-term solvency of a firm. This is reflected in its ability to assure the long-term creditors with regard to periodic payment of interest and the repayment of loan on maturity, or in pre-determined instalments at due dates. There are two types of such ratios: (a) debt-equity or debt-assets, and (b) coverage.

  The first type is computed from the balance sheet and reflects the relative contribution or stake of owners and creditors in financing the assets of the firm. In other words, such ratios reflect the safety margin to the long-term creditors.

  The second category of such ratios is based on the income statement, which shows the number of times the fixed obligations are covered by earnings before interest and taxes or cash inflows. In other words, they indicate the extent to which a fall in operating profit or cash inflows is tolerable, in that the ability to repay would not be adversely affected.

  The important leverage ratios are: **(i)** Debt/equity ratios = Total debt (long-term debt + current liabilities)/Shareholders' funds. **(ii)** Debt to total capital ratio = Total debt/Permanent capital (shareholder's funds + long-term debt). **(iii)** Debt to total assets ratio = Total debt/Total assets. **(iv)** Proprietary ratio = Owner's funds/Total assets. **(v)** Capital gearing ratio = (Preference share capital + Debentures + Other borrowed funds)/Equity funds (net worth). **(vi)** Interest coverage ratio (times-interest earned) = Earnings before interest and taxes (EBIT/Interest. **(vii)** Dividend coverage ratio = Earnings after taxes (EAT)/Preference

  dividend (D_p). **(viii)** Total coverage ratio = $$\frac{\text{EBIT} + \text{Lease payment}}{\text{Interest lease payment} + \left(\frac{D_p}{1-t}\right) + \frac{\text{Instalment of principal}}{(1-t)}}$$

  (ix) Cash flow coverage ratio = $$\frac{\text{EBIT} + \text{Lease payment} + \text{Depreciation}}{\text{Interest Lease payment} + \left(\frac{D_p}{1-t}\right) + \frac{\text{Instalment of principal}}{(1-t)}}.$$

  (x) Debt service coverage ratio = $$\frac{\sum_{t=1}^{n} \text{EAT}_t + \text{Depreciation}_t + \text{Interest}_t + \text{Other non} - \text{cash expenses}_t}{\sum_{t=1}^{n} \text{Principal}_t + \text{Interest}_t}$$

- The profitability of a firm can be measured by the profitability ratios. Such ratios can be computed either from sales or investment.

  The profitability ratios based on sales are (a) profit margin (gross and net), and (b) expenses or operating ratios. They indicate the proportion of sales consumed by operating costs and the proportion available to other expenses.

  The profitability ratios related to investments include (i) return on assets, (ii) return on capital employed, and (iii) return on shareholders' equity, including earnings per share, dividend per share, dividend-payout ratio, earning and dividend yield.

The procedure of calculating profitability ratios based on sales are: (i) Gross profit ratio/margin = Gross profit (sales – cost of goods sold)/Net sales. (ii) Operating profit ratio/margin = EBIT/Net sales. (iii) Net profit ratio/margin = Earnings after taxes (EAT)/Net sales. (iv) Cost of goods sold ratio = Cost of goods sold/Net sales. (v) Operating expenses ratio = (Administrative expenses + Selling expenses)/ Net sales. (vi) Administrative expenses ratio = Administrative expenses/Net sales. (vii) Selling expenses ratio = Selling expenses/Net sales. (viii) Operating ratio = (Cost of goods sold + Operating expenses)/ Net sales.

Ratios related to total investment are calculated as follows: **(i)** Return on total assets = (*EAT* + Interest – Tax advantage on interest)/Average total assets. **(ii)** Return on capital employed = (EAT + Interest – Tax advantage on interest)/Average total capital employed. **(iii)** Return on shareholders' equity = EAT/Average total shareholders' equity. **(iv)** Return on equity funds = (EAT – Preference dividend)/Average ordinary shareholders' equity (net worth). **(v)** Earnings per share (EPS) = Net profit available to equity shareholders' (EAT – D_p)/Number of equity shares outstanding (*N*) **(vi)** Dividends per share (DPS) = Dividend paid to ordinary shareholders/Number of ordinary shares outstanding (*N*). **(vii)** Earnings yield = EPS/Market price per share. **(viii)** DPS/Market price per share. **(ix)** Dividend payment/payout (D/P) ratio = DPS/EPS. **(x)** Price-earnings (P/E) ratio = Market price of a share/EPS. **(xi)** Book value per share = Ordinary shareholders' equity/Number of equity shares outstanding.

- The activity ratios (also known as efficiency or turnover ratios) are concerned with measuring the efficiency in asset management. The efficiency with which assets are managed/used is reflected in the speed and rapidity with which they are converted into sales. Thus, the activity ratios are a test of relationship between sales/cost of goods sold and assets. Depending upon the type of assets, activity ratios may be (a) inventory/stock turnover, (b) receivables/debtors turnover, and (c) total assets turnover.

  The first of these indicates the number of times inventory is replaced during the year or how quickly the goods are sold. It is a test of efficient inventory management.

  The second category of turnover ratios indicates the efficiency of receivables management and shows how quickly trade credit is collected.

  The total assets turnover represents the ratio of total assets to sales/cost of goods sold. It reveals the efficiency in managing and utilizing the total assets.

  The computation procedure of these ratios is as follows: (i) Raw material turnover = Cost of raw materials used/Average raw materials inventory. (ii) Work-in-process turnover = Cost of goods manufactured/Average work-in-process inventory. (iii) Finished goods inventory turnover = Cost of goods sold/ Average finished goods inventory. (iv) Debtors turnover ratio = Total credit sales/(Average debtors + Averages bills receivable). (v) Average collection period = Months (days) in year/Debtors turnover ratio. (vi) Total assets turnover = Cost of goods sold/Average total assets. (vii) Fixed assets turnover = Cost of goods sold/Average fixed assets. (viii) Current assets turnover = Cost of goods sold/Average current assets. (ix) Working capital turnover ratio = Cost of goods sold/Average net working capital. If data about cost of goods sold are not available, sales figures are used in the numerator.
- Integrated ratios provide better insight about financial and economic analysis of a firm. For instance of the rate of return on assets (ROA) can be decomposed in to net profit margin (EAT/Sales) and assets turnover (Sales/Total assets). Likewise, the ROE can be decomposed in the following two ways: (i) (EAT/Sales) × (Sales/Assets) × (Assets/Equity) and (ii) (EAT/EBT) × (EBT/EBIT) × (EBIT/ Sales) × (Sales/Assets) × (Assets/Equity).
- Growth ratios measure the rate at which the firm should grow. The two major growth ratios are internal growth rate (IGR) and sustainable growth rate (SGR).

  The IGR is the maximum rate at which the firm can grow (in sales/assets) without external financing of any kind. It is computed as follows: (ROA × *b*) 1 – (ROA) × *b*).

  The SGR is the maximum rate at which the firm can grow by using retained earnings as well as additional external debt but without increasing its financial leverage. It is measured as follows: (i) (ROE × *b*)/1 – (ROE × *b*) and (ii) ($P \times A \times A/E \times b$)/1 – ($P \times A \times A/E \times b$).

- Preparation of common-size financial statements is an extension of ratio analysis. These statements convert absolute sums into more easily understood percentages of some base amount. It is sales in the case of income statement and totals of assets and liabilities in the case of the balance sheet.
- Ratio analysis in view of its several limitations should be considered only as a tool for analysis rather than as an end in itself. The reliability and significance attached to ratios will largely hinge upon the quality of data on which they are based. They are as good or as bad as the data itself. Nevertheless, they are an important tool of financial analysis.

CHAPTER 7

Learning Objectives

1. Explain break-even point and illustrate its determination both algebraically and graphically
2. Discuss break-even applications in determining sales to produce desired profits, additional sales volume to offset a reduction in selling price and so on
3. Understand cash break-even point and its applications.

Chapter Structure

Section 1 Break-Even Analysis

Summary

- Profit planning is a function of coordinating the selling price of a unit of product, the variable cost per unit of making and selling the product, the volume of sales, sales-mix in the case of multiple-product firms and the total fixed cost.
- The volume-cost-profit analysis (VCP) is a tool to show the relationship between these ingredients of profit planning. A widely-used technique to study VCP relationship is break- even analysis (BE).
- The break-even analysis shows the relationship between costs and profits with the sales volume. The sales volume that equates the total revenues with the total related costs and results in neither profit nor loss is called the BE sales/point. In other words, the no-profit-no-loss point is BEP at which losses cease and beyond which profits begin.
- The BEP can be determined by two methods: (1) Algebraic, comprising, (a) Contribution margin approach, (b) Equation technique, and (2) Graphic presentation. According to the contribution margin approach, BEP is computed on the basis of the relationship between the fixed costs and the contribution margin (CM). The CM represents the differences between sales revenue and variable costs.
- The equation technique is specially useful in situations in which unit price and unit variable costs are not clearly identifiable. The excess of actual sales over the BE sales is the margin of safety. When the margin of safety is divided by actual sales, we get the margin of safety ratio which indicates the percentage by which actual sales may decline without the firm suffering a loss.
- Under the algebraic technique, separate computations are required. The utility of the graphic techniques/presentation lies in the fact that a set of figures can be determined without separate calculations.
- The VCP chart portrays the relationship between sales, costs and profits. It not only shows BE sales but also the effect of costs and revenues at varying sales levels. It is, therefore, also referred to as the volume-cost-profit chart (graph).
- Both the algebraic and graphic approaches can be applied to analyse the VCP relationship/profit planning to reflect changes in fixed costs, variable costs and selling price. The following are the more specific applications:
  - Sales volume required to produce desired profit
  - Operating profit at a given level of sales volume
  - Effect on operating profits of a given percentage change in sales
  - Additional sales volume required to offset reduction in selling price
  - Effect of changes in fixed costs
  - Effect of changes in variable costs

- Effect of multiple changes: cost, price and volume simultaneously
- Application to segments of a business
- Sales-mix in multi-product firms.

CHAPTER 8

Learning Objectives

1. Understand the planning process
2. Explain the definition, meaning and purpose of a budget
3. Discuss types of budgets and illustrate their preparation.

Chapter Structure

Section 1 The Planning Process
Section 2 Budget—Definition, Meaning and Purpose
Section 3 Preparation/Types of Budgets

Summary

- Budgeting is a tool of planning. Planning involves specification of the basic objectives that the organisation will pursue and the fundamental policies that will guide it. In operational terms, it involves four steps: (i) Objectives defined as the broad and long-range desired state/position of the firm, (ii) Specified goals-targets in quantitative terms to be achieved in a specified period of time, (iii) Strategies or specific methods/course of action to achieve these goals, and (iv) Budgets to convert goals and strategies into annual operating plans.
- A budget is defined as a comprehensive and coordinated plan, expressed in financial terms, for the operations and resources of an enterprise for some specified period in the future. The essential elements of a budget are: (i) Plan, (ii) Financial terms, (iii) Operations and resources, (iv) Specific future period, (v) Comprehensive coverage, and (vi) Coordination. As a tool, a budget serves as a guide to conduct operations and a basis for evaluating actual results. The main objectives of budgeting are:(i) Explicit statement of expectations, (ii) Communication, (iii) Coordination, and (iv) Expectations as a framework for judging performance.
- The overall budget is known as the master budget. It has the following components: (i) Sales budget, (ii) Production budget, (iii) Purchase budget, (iv) Direct labour budget, (v) Manufacturing expenses budget, (vi) Administrative and selling expenses budget, (vii) Budgeted income statement, (viii) Cash budget, and (ix) Budgeted balance sheet.
- The cash budget is a device to help a firm to plan for and control the use of cash. It is a statement showing the estimated cash inflows and cash outflows over the planning period. The principal aim of the cash budget, as a tool to predict cash flows over a period of time, is to ascertain whether there is likely to be excess/shortage of cash at any time.
- The preparation of a cash budget involves several steps. The first element of a cash budget is the selection of the period of the budget, that is, the planning horizon. The planning horizon of a cash budget should be determined in the light of the circumstances and requirements of a particular case. The second element of the cash budget is the selection/identification of the factors that have a bearing on cash flows. The factors that generate cash are generally divided into two broad categories:(i) Operating and (ii) Financial. The first category includes cash flows from the operations of the firm, for example, sales, collections of receivables and so on. The second category of cash flows comprise collections and payment of financial nature, for example, borrowings, dividends paid, taxes paid and so on.

- Budgets prepared at a single level of activity, with no prospect of modification in the light of changed circumstances, are referred to as fixed budgets.
- The alternative to fixed budgets are flexible/variable/sliding budgets. The term 'flexible' is an apt description of the essential features of these budgets. A flexible budget estimates costs at several levels of activity. Its merit is that instead of one estimate, it contains several estimates/plans in different assumed circumstances. It is a useful tool in real world situations, that is, unpredictable environment. A flexible budget, in a sense, is a series of fixed budgets and any increase/decrease in the level/volume of activity must be reflected in it. The conceptual framework of flexible budgeting relates to: (i) Measure of volume and (ii) Cost behaviour with change in volume. Each expense in each department/segment is to be categorised into fixed, variable and mixed components. A budget may first be prepared at the expected level of activity, say, 100 per cent capacity. Additional columns may then be added for costs below and above, 90 per cent and 110 per cent capacity and so on.
- Flexible budgets, as a tool of planning and control, are superior to fixed budgets. The major weaknesses of fixed budgets are their inability to: (i) Show the potential variability of various estimates used in the preparation of the budget, and (ii) Indicate the range within which costs may be expected to vary. They are, therefore, not useful in an uncertain and unpredictable environment. Flexible budgets present estimates at different levels of activity, and are more useful.
- Flexible budgets suffer from one limitation in that they do not explicitly consider the relative probability of a particular volume/cost being achieved. This limitation can be overcome by using a modified flexible budget which will include columns for different levels of estimates: most likely, optimistic and pessimistic.

CHAPTER 9

Learning Objectives

1. Understand the basic nature of capital budgeting, the importance of, and the difficulties associated with, capital budgeting decisions and the various types of such decisions
2. Discuss the major components of relevant cash flows, effect of taxes, depreciation, working capital on cash flow patterns/estimates
3. Calculate the relevant cash flows in single proposals, replacement situations and mutually exclusive projects
4. Compute, interpret and evaluate the accounting rate of return (ARR) and the widely-used traditional capital budgeting technique—the pay back period
5. Apply the sophisticated capital budgeting techniques—net present value (NPV) and internal rate of return (IRR)—to relevant cashflows to choose acceptable as well as preferred capital projects
6. Compute and illustrate terminal value (TV) method and profitability index (PI) as capital budgeting evaluation techniques
7. Summarise capital budget practices by corporates in India

Chapter Structure

Section 1 Nature of Capital Budgeting
Section 2 Data Requirement: Identifying Relevantcash Flows
Section 3 Evaluation Techniques

Summary

- Capital budgeting decisions relate to long-term assets which are in operation and yield a return over a period of time. They, therefore. involve current outlays in return for series of anticipated flow of future benefits.
- Such decisions are of paramount importance as they affect the profitability of a firm, and are the major determinants of its efficiency and competing power. While an opportune investment decision can yield spectacular returns, an ill-advised/incorrect decision can endanger the very survival of a firm. A few wrong decisions and the firm may be forced into bankruptcy.
- Capital expenditure decisions are beset with a number of difficulties. The two major difficulties are: (i) The benefits from long-term investments are received in some future period which is uncertain. Therefore, an element of risk is involved in forecasting future sales revenues as well as the associated costs of production and sales; (ii) It is not often possible to calculate in strict quantitative terms all the benefits or the costs relating to a specific investment decision.
- Such decisions are of two types, namely, revenue expanding investment decisions and cost reducing investment decisions. The latter types of decisions are subject to less risk as the potential cash saving can be estimated better from the past production and cost data. It is more difficult to estimate revenues and costs of a new product line.
- The capital outlays and revenue benefits associated with such decisions are measured in terms of cash flows after taxes. The cash flow approach for measuring benefits is theoretically superior to the accounting profit approach as it (i) avoids the ambiguities of the accounting profits concept, (ii) measures the total benefits and (iii) takes into account the time value of money.

- The major difference between the cash flow and the accounting profit approaches relates to the treatment of depreciation. While the accounting approach considers depreciation in cost computation, it is recognised, on the contrary, as a source of cash to the extent of tax advan-tage in the cash flow approach.
- For taxation purposes, depreciation is charged (on the basis of written down value method) on a block of assets and not on an individual asset. A block of assets is a group of assets (say, of plant and machinery) in respect of which the same rate of depreciation is prescribed by the Income-Tax Act.

  Depreciation is charged on the year-end balance of the block which is equal to the opening balance plus purchases made during the year (in the block considered) minus sale proceeds of the assets during the year.

  In case the entire block of assets is sold during the year (the block ceases to exist at year-end), no depreciation is charged at the year-end. If the sale proceeds of the block sold is higher than the opening balance, the difference represents short-term capital gain which is subject to tax. Where the sale proceeds are less than the opening balance, the firm is entitled to tax shield on short-term capital loss. The adjustment related to the payment of taxes/tax shield is made in terminal cash inflows of the project.
- The data requirement for capital budgeting are after tax cash outflows and cash inflows. Besides, they should be incremental in that they are directly attributable to the proposed investment project. The existing fixed costs, therefore, are ignored. In brief, incremental after-tax cash flows are the only relevant cash flows in the analysis of new investment projects.
- The investment in new capital projects can be categorised into (i) a single proposal, (ii) a re-placement proposal and (iii) mutually exclusive proposals.
- In the case of single/independent investment proposal, cash outflows primarily consist of(i) purchase cost of the new plant and machinery, (ii) its installation costs and (iii) working capital requirement to support production and sales (in the case of revenue expanding proposals/release of working capital in cost reduction proposals.

  The cash inflows after taxes (CFAT) are computed by adding depreciation (D) to the projected earnings after taxes (EAT) from the proposal. In the terminal year of the project, apart from operating CFAT, the cash inflows include salvage value (if any, net of removal costs), recovery of working capital and tax advantage\taxes paid on short-term capital loss\gain on sale of machine (if the block ceases to exist).
- In the case of replacement situation, the sale proceeds from the existing machine reduce the cash outflows required to purchase the new machine. The relevant CFAT are *incremental* after-tax cash inflows.
- In the case of mutually exclusive proposals, the selection of one proposal precludes the sele-ction of the other(s). The computation of the cash outflows and cash inflows are on lines similar to the replacement situation.
- The capital budgeting evaluation techniques are: (i) traditional, comprising (a) average/accounting rate of return (ARR) and (b) pay back (PB) period; (ii) discounted cash flow (DCF), primarily consisting of (a) net present value (NPV), (b) internal rate of return (IRR) and (iii) profitability/present value index (PI).
- The ARR is obtained dividing annual average profits after taxes by average investments. Average investment = 1/2 (Initial cost of machine – Salvage value) + Salvage value + net working capital. Annual average profits after taxes = Total expected after tax profits/Number of years

  The ARR is unsatisfactory method as it is based on accounting profits and ignores time value of money.
- The pay back method measures the number of years required for the CFAT to pay back the initial capital investment outlay, ignoring interest payment. It is determined as follows:
  (i) In the case of annuity CFAT: Initial investment/Annual CFAT.
  (ii) In the case of mixed CFAT: It is obtained by cumulating CFAT till the cumulative CFAT equal the initial investment.

Although the pay back method is superior to the ARR method in that it is based on cash flows, it also ignores time value of money and disregards the total benefits associated with the investment proposal.

- The DCF methods satisfy all the attributes of a good measure of appraisal as they consider the total benefits (CFAT) as well as the timing of benefits.
- The NPV may be described as the summation of the present values of (i) operating CFAT (CF) in each year and (ii) salvages value(S) and working capital(W) in the terminal year(n) minus the summation of present values of the cash outflows(CO) in each year. The present value is computed using cost of capital (k) as a discount rate. Symbolically,

$$\text{NPV} = \sum_{t=1}^{n} \frac{CF_t}{(1+k)^t} + \frac{S_n + W_n}{(1+k)^n} - \sum_{t=0}^{n} \frac{CO_t}{(1+k)^t}$$

The project will be accepted in case the NPV is positive.

- The IRR is defined as the discount rate (r) which equates the aggregate present value of the operating CFTA received each year and terminal cash flows (working capital recovery and salvage value) with aggregate present value of cash outflows of an investment proposal. Symbolically,

$$\text{IRR} = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t} + \frac{S_n + W_n}{(1+r)^n} - \sum_{t=1}^{n} \frac{CO_t}{(1+r)^t}$$

The project will be accepted when IRR exceeds the required rate of return.

- The profitability index/present value index measures the present value of returns per rupee invested. It is obtained dividing the present value of future cash inflows (bot operating CFAT and terminal) by the present value of capital cash outflows. The proposal will be worth accepting if the PI exceeds one.

CHAPTER 10

Learning Objectives

1. Use present value profiles to compare and contrast and evaluate NPV and IRR techniques in light of conflicting rankings
2. Compare and contrast NPV and PI evaluation techniques
3. Describe two capital budgeting refinements—comparing projects with unequal lives and capital rationing—that frequently require special form of analysis
4. Review the procedure to incorporate impact of inflation on capital budgeting decisions

Chapter Structure

Section 1 NPV, IRR, Profitability Index Methods – A Comparison
Section 2 Project Selection Under Capital Rationing
Section 3 Inflation And Capital Budgeting

Summary

- In case of independent investment proposals, all the discounted cash flow (DCF) methods provide consistent results in terms of acceptance or rejection of capital budgeting proposal(s). The independent proposals refer to investment projects, the acceptance of which does not preclude the acceptance of other profitable proposal (s).

  The reason is that all the DCF methods are based on cash flows and take into account total benefits as well as time value of money. The data inputs in terms of cash outflows, CFAT, cost of capital and so on is the same for all these methods. As a result, the investment projects which have positive NPV will also have (i) an IRR> required rate of return, (k) and (ii) a present value index >one
- In the case of mutually exclusive proposals, the DCF methods may provide conflicting rankings. The reason is while the NPV method is based on the *total* yield/earnings/NPV, the other two methods (IRR and PI) are concerned with the *rate* of return/earnings on investment.
- While IRR and PI methods are not compatible with the objective of financial decision making of the firm, that is, maximising shareholders' wealth, the recommendation of NPV method is consistent with the goal of the firm of maximising shareholders' wealth.
- The IRR and PI methods can be modified (by adopting the incremental approach) to give results identical to the NPV method. The logic behind the incremental approach is that the firm would get the profits promised by the smaller outlay investment project plus the profit on the incremental investments required in the project involving larger outlay.
- The conflict between the NPV and IRR methods is mainly ascribed to the different reinvestment rate assumptions of intermediate cash inflows accruing from projects. The IRR method implicitly assumes that the cash flows generated from the projects are subject to reinvestment at IRR. In contrast, the reinvestment rate assumption under the NPV method is the cost of capital. The assumption of the NPV method is conceptually superior to that of the IRR as the former has the virtue of having a uniform rate which can consistently be applied to all investment proposals.
- The IRR can be modified (to overcome the deficiency of the reinvestment rate assumption) assuming the cost of capital to be the reinvestment rate.
- The IRR method is beset with computational and other operational difficulties. In the case of mixed-stream of cash flows, it involves a trial-and-error procedure. When cash flows are non-conventional,

its value is either indeterminate or it has multiple values. In contrast, the NPV calculations do not present any such problems.

- The NPV method continues to be the best alternative under capital rationing situations. For these reasons, therefore, the NPV emerges as a theoretically correct and better technique for evaluation of capital projects.
- There are two approaches to deal with investment projects of unequal/varying lives:(i) common time horizon approach and (ii) equivalent annual value, (EANPV)/cost approach (EAC). The first approach requires that the projects must be compared over the same period of time (by taking the LCM of the lives of the capital projects). The implicit assumption of this approach is that the investment which is being replaced will produce cash flows of a similar pattern in future as it has done in the past. Therefore, the approach lacks realism and presents operational difficulties to be used in the real business world.
- The EANPV/EAC is a better approach. The EANPV is determined dividing the NPV of cash flows of the project by the annuity factor corresponding to the life of the project at the given cost of capital. The EAC is obtained dividing the total PV of cash outflows by the relevant annuity factor. While the maximisation of EANPV is the decision-criterion in the case of revenue-expanding proposals, the minimisation of EAC is the guiding criterion for cost reduction proposals.
- Capital rationing involves the choice of combination of available projects maximise the total NPV, given the capital budget constraints. The ranking of investment projects can be done either on the basis of present value index or the IRR. The procedure to select the package of investment projects will relate to whether the project is divisible or indivisible, the objective being the maximisation of total NPV by exhausting the capital budget as far as possible.
- Cash flows of the project should be adjusted for the inflation factor so that they reflect the real purchasing power. The nominal CFAT should be deflated at the rate of inflation. The deflated CFAT are real cash flows. The real CFAT are then discounted at the real rate of discount.
- The nominal rate of discount (n) is obtained by compounding the real rate (r) and inflation rate (i). In equation terms, $(1 + n) = (1 + r)/ (1 + i)$.

  From this equation the following real rate of discount (r) can be obtained: $(1 + r) = (1 + n)/ (1 + i)$. The decision criterion is to accept the investment project if it has positive NPV of the real CFAT, discounted at the real rate.
- Alternatively, the nominal CFAT (not adjusted for inflation), are to be discounted at the nominal rate of discount. Both these approaches provide an identical amount of NPV. Therefore, the capital budgeting decisions should either reckon the inflation factor in CFAT as well as cost of capital or exclude it completely.

CHAPTER 11

Learning Objectives

1. Understand the basic assumptions, relationships, concepts and specific sources of capital underlying the cost of capital.
2. Determine the cost of long-term debt using calculations and an approximation (short-cut) technique
3. Compute the cost of preference shares.
4. Calculate the cost of equity shares using (i) dividend valuation approach and (ii) capital asset pricing model (CAPM) approach and convert it into cost of retained earnings.
5. Find the weighted average/overall cost of capital and discuss the alternative weighting schemes—historical (book values as well as market values) and marginal.
6. Outline cost of capital practices followed by corporates in India.

Chapter Structure

Section 1 Importance and Concept
Section 2 Measurement of Specific Costs
Section 3 Computation of Overall Cost of Capital

Summary

- The cost of capital is an integral part of investment decisions as it is used to measure the worth of investment proposal. It is used as a discount rate in determining the present value of future cash flows associated with capital projects. Conceptually, it is the minimum rate of return that a firm must earn on its investments so as to leave market price of its shares unchanged. It is also referred to as cut-off rate, target rate, hurdle rate, required rate of return and so on.
- In operational terms, it is defined as the weighted average cost of capital (k_0) of all long-term sources of finance. The major long-term sources of funds are (i) debt, (ii) preference shares, (iii) equity capital, and (iv) retained earnings. Thus, it comprises of several components in terms of specific cost of each source of finance. When these specific costs are combined, it results in the weighted average cost of capital.
- The cost of capital can be explicit or implicit. The explicit cost of capital is associated with the raising of funds (from debt, preference shares and equity). The explicit cost of any source of capital (C) is the discount rate that equates the present value of the cash inflows (CI_o) that are incremental to the taking of financing opportunity with the present value of its incremental cash outflows (CO_t). Symbolically, $CI_o = \sum_{t=1}^{n} \frac{CO_t}{(1+C)^t}$

  Its determination is similar to the determination of the internal rate of return (IRR). It is the internal rate of return that the firm pays to procure financing.
- Retained earnings involve no future cash flows to, or from, the firm. Therefore, the retained earnings do not have explicit cost. However, they carry implicit cost in terms of the opportunity cost of the

foregone alternative (*s*) in terms of the rate of return at which the shareholders could have invested these funds had they been distributed to them/or not retained by the firm.

- There are four types of specific costs, namely, cost of debt (k_d), cost of preference shares (k_p), cost of equity capital (k_e) and cost of retained earnings (k_r).
- The debt carries a certain rate of interest. Interest qualifies for tax deduction in determining tax liability. Therefore, the effective cost of debt is less than the actual interest payment made by the firm by the amount of tax shield it provides. The debt can be either perpetual or redeemable.
- In the case of perpetual debt, it is computed dividing effective interest payment, i.e., $I\,(1 - t)$ by the amount of debt/sale proceeds of debentures or bonds (SV). Symbolically, $K_d = \dfrac{I(1-t)}{SV}$
- In the case of redeemable debt, the repayment of debt principal (COP) either in instalments or in lump sum (besides interest, COI) is also taken into account. k_d is computed based on the following equations:

$$CI_0 = \sum_{t=1}^{n} \frac{COI_t}{(1+k_d)^t}(1-t) + \frac{COP_n}{(1+k_d)^n} \quad \text{(When principal is paid in lump sum)}$$

Alternatively, $K_d = \dfrac{I(1-t) + (\text{Redeemable value}, RV - SV/N)}{(RV + SV)/2}$

$$CI_0 = \sum_{t=1}^{n} \frac{COI_t}{(1+k_d)^t}(1-t) + \frac{COP_t}{(1+k_d)^t} \quad \text{(When debt is paid in instalments)}$$

- The cost of debt is generally the lowest among all sources partly because the risk involved is low but mainly because interest paid on debt is tax deductible.
- The cost of preference share (k_p) is akin to k_d. However, unlike interest payment on debt, dividend payable on preference shares is not tax deductible from the point of view assessing tax liability. On the contrary, tax (Dt) may be required to be paid on the payment of preference dividend.
- The k_p in the case of irredeemable preference shares is based on dividends payable on them and the sale proceeds obtained by issuing such preference shares, $P_0\,(1 - f)$. In terms of equation:

$$K_p = \frac{D_p(1+Dt)}{P_0(1-f)}$$

- The k_p for redeemable preference shares requiring lump sum repayment (P) is determined on the basis of the following equation:

$$P_0\,(1 - f) = \sum_{t=1}^{n} \frac{D_p(1+Dt)}{(1+k_p)^t} + \frac{P_n}{(1+k_p)^n}$$

In the case of repayment required in instalments:

$$P_0\,(1 - f) = \sum_{t=1}^{n} \frac{D_p(1+Dt)}{(1+k_p)^t} + \frac{P_t}{(1+k_p)^t}$$

- The computation of cost of equity capital (k_e) is conceptually more difficult as the return to the equity-holders solely depends upon the discretion of the company management. It is defined as the minimum rate of return that a corporate must earn on the equity-financed portion of an investment project in order to leave unchanged the market price of the shares.
- There are two approaches to measure k_e: (i) the dividend valuation model approach and (ii) capital asset pricing model (CAPM) approach.

As per the dividend approach, k_e is defined as the discount rate that equates the present value of all expected future dividends per share with the net proceeds of the sale (or the current market price) of a share. In equation terms,

$$P_0\ (1 - f) = \sum_{t=1}^{n} \frac{D_1(1+g)^{t-1}}{(1+k_e)^t} \quad \text{Or,} \quad k_e = \frac{D_1}{P_0(1-f)} + g$$

- The CAPM describes the relationship between the required rate of return or the cost of equity capital and the non-diversifiable or relevant risk of the firm as reflected in its index of non-diversifiable risk, that is, beta. Symbolically,

  $K_e = R_f + b(K_m - R_f)$,

  R_f = Required rate of return on risk-free investment
  b = Beta coefficient**, and
  K_m = Required rate of return on market portfolio, that is, the average rate or return on all assets

  $$** = \frac{\sum MJ - N\overline{M}\,\overline{J}}{\sum M^2 - (N\overline{M})^2}, \text{where}$$

  M = Excess in market return over risk-free rate,
  J = Excess in security returns over risk-free rate,
  MJ = Cross product of M and J and
  N = Number of years
- The cost of retained earning (k_r) is equally difficult to calculate in theoretical terms. Since retained earnings essentially involves use of funds, it is associated with an opportunity/implicit cost. The alternative to retained earnings is the investment of the funds by the firm itself in a homogeneous outside investment. Therefore, k_r is equal to k_e. However, it might be slightly lower than k_e in the case of new equity issue due to flotation costs.
- The measurement of the weighted average/overall cost of capital (k_0) involves the choice of appropriate weights. The two systems of assigning weights, namely, historical and marginal, have their own suitability but historical weights appear to be superior to marginal weights as the former take into account the long-term implications of the firm's current financing. With historical weights, a choice is to be made between book value and market value weights. While the book value weights are operationally convenient, the market value basis is theoretically consistent and sound, and therefore, a better indicator of firm's capital structure.
- The k_0 is computed based on the following equation:
  $K_0 = K_dW_d + K_pW_p + K_eW_e + K_rW_r$
  W_d = Percentage of debt to total capital,
  W_p = Percentage of preference shares to total capital,
  W_e = Percentage of external equity to total capital and
  W_r = Percentage of retained earnings to total capital

CHAPTER 12

Learning Objectives

1. Discuss the basic risk concept and its precise expression—sensitivity analysis, scenario analysis and simulation
2. Review two precise measures of risk measurement—standard deviation as an absolute measure and coefficient of variation as a relative measure of risk
3. Understand the calculation and practical aspects of risk-adjusted discount rate (RADR) and certainty-equivalent (CEs) as basic risk-adjusted techniques
4. Explain the probability distribution approach to deal with risks
5. Illustrate the decision-tree approach to evaluate risky investment proposals
6. Discuss real options and their types
7. Outline the features relating to the methodology followed by Indian corporates to assess project risk and the relative significance assigned to different risk assessment techniques

Chapter Structure

Section 1 Description and measurement of Risk
Section 2 Risk Evaluation Approaches
Section 3 Risk and Real Optoins

Summary

- Risk refers to the variability in the actual returns *vis-à-vis* the estimated returns, in terms of cash flows.
- Risk involved in capital budgeting can be measured in absolute as well as relative terms. The absolute measures of risk include sensitivity analysis, simulation and standard deviation. The coefficient of variation is a relative measure of risk.
- Sensitivity analysis provides information as to how sensitive the various estimated project parameters, namely, cash flows, cost of capital and project's economic life are to estimation errors. The estimates are normally made under three assumptions: (i) the most pessimistic, (ii) the most likely and (iii) the most optimistic.
- Scenario analysis evaluates the impact of simultaneous changes in more than one variable at a time on the project's profitability. The analysis normally is carried out on three sets of scenarios: (1) most likely (2) worst-case and (3) best-case. The values of NPV can be used to assess project risk. In case the project promises positive NPV even in the worst case scenario, it is considered to have low risk. The project is considered highly risky if it generates moderate NPV even in the best-case.
- Simulation technique employs predetermined probability distributions and random numbers to estimate risky outcomes. It shows impact of changes in all the key variables on the distribution of probable values of NPV, in one iteration only.
- Standard deviation measures the variability of cash flows around the expected value. Symbolically, the expected value ($\overline{CF}$) is $\sum_{t=1}^{n} CF_i P_i$. The formula to calculate standard deviation (σ) is $\sqrt{\sum_{t=1}^{n} P_i (CF_i - \overline{CF})^2}$. The greater is the value of (σ), the higher is the degree of risk associated with the pro-posed investment project.

- Coefficient of variation (*V*) is an appropriate technique of measuring risk of alternative projects involving different investment outlays. It is $\sigma/\overline{CF}$.
- There are four important methods of incorporating risk: (1) Risk adjusted discount rate (RAD) approach, (2) Certainty equivalent (CE) approach, (3) Probability distribution (PD) approach and (4) Decision-tree (DT) approach.
- According to the RAD approach, the element of risk is incorporated by adjusting the required rate of return, using higher discount rates for more risky projects and lower disocunt rates for less risky projects. The $NPV = \sum_{t=1}^{n} \frac{CFAT_t}{(1+k_r)^t} - CO$.
- The CE approach adjusts the risk through the cash flows associated with the projects with the help of certainty-equivalent coefficient. The CE coefficient (a) indicates the relationship bet-ween riskless cash flows and risky cash flows. The $NPV = \sum_{t=1}^{n} \frac{a_t\ CFAT_1}{(1+i)^t} - CO$.
- The PD approach illustrates the analysis of risk through the application of probability distribution, assuming independence of cash flows over time. The steps involved are: (i) Determination of expected NPV, (ii) computation of standard deviation of expected cash flows and (iii) calculation of probability of different value of *NPV* based on *Z* value. The value of $Z = (X_t - \overline{X})/\sigma$.
- The DT approach takes into account the impact of all probable estimates of potential out-comes. Every possible outcome is weighed in probability terms and then evaluated, assuming dependence of cash flows. The expected $NPV\ (\overline{NPV}) = \sum_{j=1}^{m} P_j\ NPV_j$.
- Real options are associated with real assets. They have value in that they provide opportunities to the management to respond to the changing circumstances likely to have positive impact on the eventual outcome of an investment project. As a result, the project's worth is higher by the value of the option.
- There are four major types of options: (1) growth option, (2) abandonment option, (3) timing option and (4) flexibility option.
- Growth option is an option to expand production in case the sales demand for a product exceeds expectation. It has also the potential to develop follow-on projects.
- Abandonment option is an option to abandon the investment project prior to the completion of its expected economic useful life. A variant to abandonment option is an option to suspend or contract business operations temporarily.
- Investment timing option is an option to undertake an investment project at an appropriate time. This option emphasises upon the value to wait; an investment/project started early need not necessarily yield the maximum NPV.
- Flexibility option is an option to incorporate flexibility into the firm's operations. In particular, it focuses on the need to design a production process to accept multiple inputs and use a versatile plant to produce a variety of products by reconfiguring the same plant and equipment.

CHAPTER 13

Learning Objectives

1. Understand the three definitions of working capital: gross, net and zero
2. Explain policies related to current assets management
3. Discuss, in terms of profitability and risk, the aggressive financing strategy and the conservative financing strategy for total-permanent and seasonal-fund requirements
4. Analyse the need for working capital as related to operating/cash cycle, permanent and temporary working capital
5. Describe in general terms the factors having a bearing on the total quantum of working capital required
6. Review the computation of working capital, using both the cash cost approach and the operating cycle approach

Chapter Structure

Section 1 Nature of Working Capital
Section 2 Planning of Working Capital

Summary

- Working capital management is concerned with the problems that arise in managing the current assets (CA), current liabilities (CL) and the interrelationships between them. Its opera-tional goal is to manage the CA and CL in such a way that a satisfactory/acceptable level of net working capital (NWC) is maintained.
- There are three concepts of working capital (WC): gross, net and zero. The gross WC means the total CA. The NWC is the difference between the CA and CL. Zero WC = inventories plus receivables minus payables.
- The NWC is necessary due to non-synchronous nature of expected cash inflows and required cash outflows. The more predictable the cash inflows are, the less NWC will be required and *vice-versa.* The NWC represents the liquidity position of a firm.
- The NWC has a bearing on liquidity, profitability and risk of becoming technically insolvent. In general, the greater is the NWC, the higher is the liquidity, the lower is the risk and the profitability, and *vice-versa.* The trade-off between profitability and risk is an important element in the evaluation of the level of NWC of a firm.
- Determination of financing mix is another important constituent of WC management. The financing mix refers to the proportion of CA to be financed by short-term sources (CL) and long-term sources (such as share capital and long-term borrowings). It is concerned with determination of relative share of these two broad sources in financing CA.
- There are three approaches to determine an appropriate financing mix: (i) hedging/matching approach, (ii) conservative approach and (iii) trade-off between these two.
- According to hedging approach, long-term funds should be used to finance the permanent/core part of the CA and the purely temporary and seasonal requirements (over and above the permanent needs) should be met out of short-term funds. This approach is a high profit-high risk financing mix.

- According to the conservative approach, the estimated total requirements of the CA should be financed from long-term sources. The short-term sources of finance should be used only in emergency situations. The firm has NWC equal to the excess of long-term financing over the permanent requirement. This approach is a low-profit, low-risk combination.
- Neither the hedging approach nor the conservative approach is suitable for determining an appropriate financing mix. A trade-off between these two extreme approaches would give an acceptable financing strategy.
- The need for working capital (WC) arises from the cash/operating cycle of a firm. It refers to the length of time required to complete the following sequence of events: conversion of cash into inventory, inventory into receivables and receivables into cash. The operating cycle creates the need for working capital and its length in terms of time-span required to complete the cycle is the major determinant of the firm's working capital needs.
- Working capital can be (i) permanent and (ii) temporary. While the permanent component reflects the need for a certain irreducible level of current assets on a continuous and uninterrupted basis, the temporary portion is needed to meet seasonal and other temporary requirements. While permanent working capital requirements should be financed from long-term sources, short-term funds should be used to finance temporary working capital needs of a firm.
- Working capital requirements are determined by a variety of factors. These factors, however, affect different enterprises differently. In general, the factors relevant for proper assessment of the quantum of working capital required are: general nature of business, production cycle, business cycle, production policy, credit policy, growth and expansion, availability of raw materials, profit-level, level of taxes, dividend policy, depreciation policy, price level changes and operating efficiency.
- Manufacturing and trading enterprises require fairly large amounts of working capital to maintain a sufficient amount of cash, inventories and book debts to support their production (purchases) and sales activity. Service enterprises (like public utilities) and hotels, restaurants and eating houses need to carry less WC.
- The longer is the production cycle, the larger is the WC needed or *vice-versa.*
- While during boom conditions, reflecting upswing in business activity, the need for WC is likely to grow to cater to the increased level of activity, the need for working capital in the downswing phase/ recessionary conditions tend to be low due to fall in the volume of sales and production.
- While the liberal credit policy offered to customers would necessitate more working capital, tight credit terms would reduce its requirement. The liberal credit terms available from creditors/suppliers of materials would be an offsetting factor.
- Growth industries and firms require more working capital.
- To meet vagaries in the unavailability, a firm should have excess inventory of raw materials to sustain smooth production. Such a firm would tend to have high level of WC.
- Cash profit, *per-se*, should not be viewed as a source of financing WC. The actual availability of such funds would depend upon the firm's requirement for payment of dividend, payment of loan instalment, creation of sinking fund, purchase of fixed assets, and so on. In case these requirements are substantial, cash profit is not likely to be available to meet the needs of a firm. Alternatively, only adjusted cash profits after provisioning for these requirements should be reckoned for WC financing.
- The payment of dividend consumes cash resources and, therefore, decreases WC of a firm. Conversely, the non-payment of dividend increases WC.
- Higher depreciation (enhanced rates of depreciations) has a positive impact on WC for two reasons: (i) lower tax liability and, hence, more cash profits and (ii) lower disposable profits and, therefore, a smaller dividend payment. They imply more cash with a corporate.

- Rising prices in input costs (without corresponding increase or less than a proportionate increase in selling prices of products) necessitates more WC to sustain an existing level of activity.
- Efficiency of operations accelerates the pace of cash cycle and improves the WC turnover resulting in reduced requirement of WC.
- A firm should have adequate WC to support its budgeted level of activity in terms of production/sales. It should have neither more nor less WC than required. While the excessive WC adversely affects its profits, the inadequate WC interrupts its smooth operations. Therefore, its correct computation is an important constituent of efficient WC management.
- There are two components of WC, namely, CA and CL. Each component is to be separately estimated to determine the correct amount of WC. The relevant factors are the holding periods of the various types of inventories, debtors collection period, creditors payment period, budgeted yearly production/sales, cost of goods produced, cost of sales, average time-lag in payment of wages and other overheads, minimum cash balances and so on.
- Working capital requirements are to be computed with reference to cash costs (excluding depreciation) and not the sale price as depreciation is a non-cash cost and, hence, does not need WC. The investment required to finance debtors are at cost price. The 'cash cost approach' is appropriate to determine WC requirement of a firm.

CHAPTER 14

Learning Objectives

1. Discuss the motives for holding cash and marketable securities
2. Understand the objectives of cash management
3. Describe the factors that determine the required cash balances
4. Outline analytical models for cash management as a normative framework to provide an insight into how cash management should be conducted
5. Review and illustrate cash budget as a cash management tool
6. Demonstrate, using the operating and cash conversion cycles, the three basic strategies for the efficient management of cash to minimise financing/cash balance needs
7. Review popular techniques for speeding up collections and slowing disbursements
8. Understand the basic characteristics of marketable securities and the key features of the popular types of Government and non-Government issues
9. Outline cash management practices in India

Chapter Structure

Section 1 Motives for Holding Cash
Section 2 Objectives of Cash Management
Section 3 Factors Determining Cash Needs
Section 4 Determining Cash Need
Section 5 Cash Management: Basic Strategies
Section 6 Cash Management Techniques/Processes
Section 7 Marketable Securities

Summary

- Cash management is one of the key areas of working capital management. There are four motives for holding cash: (i) transaction motive, (ii) precautionary motive, (iii) speculative motive, and (iv) compensating motive. The transaction motive refers to the holding of cash to meet anticipated obligations whose time is not perfectly synchronised with cash receipts.The cash balances held in reserve for random and unforeseen fluctuations in cash flows are called precautionary balances. The speculative motive indicates the desire of a firm to take advantage of opportunities which present themselves at unexpected moments and which are typically outside the normal course of business. The compensating motive means keeping the bank balance sufficient to earn a return equal to the cost of free services provided by the banks.
- The basic objectives of cash management are to reconcile two mutually contradictory and conflicting tasks: to meet the payment schedule and to minimise funds committed to cash balances.
- The factors that determine the required cash balances are: (i) synchronisation of cash flows, (ii) the cost associated with a shortfall in the firm's cash needs, (iii) excess cash balance cost, (iv) cost associated with establishing an operating cash management staff and activities, and (v) the impact of uncertainties on cash management strategy.

  There are two approaches to derive an optimal cash balance: (i) minimising cash cost models and (ii) cash budget. The important models are: (1) Baumol Model, (2) Miller-Orr Model and (3) Orgler's Model.

- The focus of Baumol model is to minimise the total cost associated with cash management comprising total conversion costs (that is, costs incurred each time marketable securities are converted into cash) and the opportunity cost of keeping idle cash balances which otherwise could have been invested in marketable securities.
- The objective of Miller-Orr Model is to determine the optimum cash balance level which minimises the cost of cash management.
- Orgler's model requires the use of multiple linear programming to determine an optimal cash management strategy. An important feature of this model is that it allows the financial mana-gers to integrate cash management with production, current assets requirement and other aspects of the corporate.
- Cash budget is probably the most important tool in cash management. It is a device to help a firm to plan and control the use of cash. The cash position of a firm as it moves from one period to another period is highlighted by the cash budget. A cash budget has normally three parts, namely, cash collections, cash payments and cash balances. The major sources of cash receipts and payments are operating and financial. The operating sources are repetitive in nature, while the financial sources are non-recurring.
- The cash management strategies are intended to minimise the operating cash balance requirement. The basic strategies that can be employed are (i) stretching accounts payable without affecting the credit of the firm, (ii) efficient inventory management and (iii) speedy collections of accounts receivable. Some of the specific techniques and processes for speedy collection of receivables from customers are ensuring prompt payment for customers and early payment/conversion into cash. Concentration banking and lock-box system deserve specific mention as principal methods of establishing a decentralised collection network. The techniques to delay payments of accounts payable include avoidance of early payment, centralised disbursements and float.
- Concentration banking, as a system of decentralised billing and multiple collection points, is a useful technique to expedite the collection of accounts receivable by reducing the mailing time. The mailing time is saved both in respect of sending the bill to the customers as well as in the receipt of payment.
- Under the lock-box system, firms hire a post office lock-box at important collection centers where the customers remit payments. The local banks are authorized to open the box and pick up the remittances (cheques) received from the customers. As a result, there is some extra saving in mailing time compared to concentration banking.
- The financial evaluation of concentration banking and lock-box system would be based on the incremental analysis by comparing the cost of operations and benefits in terms of interest earnings on the early release of funds.
- Marketable securities are an outlet for surplus cash as liquid security/assets. To be liquid a security must have two basic characteristics, that is, a ready market and safety of principal.
- The selection criteria for marketable securities include the evaluation of financial risk, interest-rate risk, liquidity, taxability and yield among different financial assets. The prominent marketable securities available for investment are: treasury bills, negotiable certificates of deposits, commercial paper, bankers' acceptance, units of mutual funds, intercorporate deposits, interbank call money, commercial bills under the bill market scheme and short-term deposits.

CHAPTER 15

Learning Objectives

1. Review the specific costs and benefits which are relevant to determining the objectives of receivables management
2. Understand how to measure the key variables and use them to evaluate quantitatively the effects of either relaxing or tightening a firm's credit standards
3. Describe the key aspects of credit selection: obtaining credit information and analysing credit information
4. Review the three basic components of a firm's credit terms, the effects of changes in each of them on key variables and profits and the procedure for evaluating the quantitative effects of the proposed changes
5. Explain the key features of collection policy, the basic tradeoffs and the popular collection techniques

Chapter Structure

Section 1 Objectives
Section 2 Credit Policies
Section 3 Credit Terms
Section 4 Collection Policies

Summary

- When a firm sells goods and services on credit, it creates accounts receivable/debtors which would be collected in future. Accounts receivable, repesent an extension of credit to customers, allowing them a reasonable period of time, in which to pay for the goods/services purchased by them. In fact, credit sales and, therefore, receivables are considered as a marketing tool to promote sales and thereby profits.
- The extension of credit involves risk and cost. The objective of receivables management, therefore, is to have a trade-off between the benefits and costs associated with the extension of credit. The benefits are increased sales and anticipated increased profits/incremental con-tribution. The major costs are collection costs, capital costs, delinquency costs and default costs. The firm should consider only the incremental benefits and costs that result from a change in the receivables or trade credit policy.
- The management of receivables involves crucial decision in three areas: (i) credit policies, (ii) credit terms and (iii) collection policies.
- The credit policy of a firm provides the framework to determine whether or not to extend credit to a customer and how much credit to extend. The two broad dimensions of credit policy decision of a firm are credit standards and credit analysis.
- Credit standards represent the basic criterion for the extension of credit to customers. These can be either tight/restrictive or liberal/non-restrictive. The trade-off with reference to credit standards cover: (i) collection cost, (ii) cost of investment in debtors, (iii) bad debts and (iv) level of sales profit/contribution. The credit analysis component of credit policies includes obtaining credit information from different sources and its analysis.

- In case, the standards are relaxed, it implies credit for a longer period will be extended. More credit results in increase in sales. The benefits of incremental sales are to be weighed against incremental collection costs, interest costs due to additional investment in debtors, delinquency cost and bad debts.
- When standards are tightened, it implies less period of credit extended to customers. It would result in decrease in sales. The contribution foregone due to decrease in sales is to be com-pared with savings due to the lower collection costs, interest costs and bad debt losses.
- Credit terms specify the repayment terms. The credit terms have three components: (i) credit period, (ii) cash discount and (iii) cash discount period. The credit terms should be determined on the basis of cost-benefit trade-off in these three components.
- Collection policies refer to the procedure followed to collect the receipts when they become due. The collection policies may be classified into (i) strict and (ii) liberal. The effects of tightening the collection policy would be: (i) decline in debts, (ii) decline in collection period resulting lower interest costs, (iii) increase in collection costs and (iv) decline in sales. The effects of a lenient policy would be exactly the opposite.
- The framework of analysis of all the three decision areas in receivables management is to secure a trade-off between the costs and benefits of the measurable effects on the sales vol-ume, capital cost due to change in investment in debtors, collection costs, bad debts and so on. The firm should select an alternative which has potentials of more benefits than the cost.

CHAPTER 16

Learning Objectives

1. Discuss the tradeoffs between costs and benefits associated with the level of inventory
2. Describe the common techniques for managing inventory—ABC system, the basic economic order quantity (EOQ) model, the recorder point and the safety stock
3. Discuss just-in time inventory/production

Chapter Structure

Section 1 Objectives
Section 2 Techniques
Section 3 Just-in Time Inventory/Production

Summary

- Inventory refers to the stockpile of the products a firm would sell in future in the normal course of business operations and the components that make up the product. The firm stores three types of inventories, namely, raw materials, work-in-process/semi-finished goods and finished good.
- The management of inventory is different from the management of other current assets in that virtually all the functional areas are involved. The job of the finance manager is to reconcile the conflicting viewpoints of the various functional areas regarding the appropriate inventory levels.
- The objectives of inventory management consists of two counterbalancing parts: (i) to minimise investments in inventory and (ii) to meet the demand for products by efficiently organising the production and sales operations. In operational terms, the goal of inventory management is to have a trade-off between these two conflicting objectives which can be expressed in terms of costs and benefits associated with different levels of inventory.
- The costs of holding inventory are ordering costs and carrying costs. While ordering costs are associated with the acquisition or ordering of inventory, carrying costs arise due to the storing of inventory. The major benefits of holding inventory are in the area of purchasing, production and sales. The total cost of inventory are to be compared with the total benefits arising out of inventory to determine its optimum level.
- There are four decision areas in inventory management: (i) classification problem, (ii) order quantity problem, (iii) order point problem and (iv) safety stock.
- The ABC system is a widely-used classification technique to identify various items of inventory for purposes of inventory control. On the basis of the cost involved, the various items are classified into three categories: (i) A, consisting of items with the large investment, (ii) C, with relatively small investments but fairly large number of items and (iii) B, which stands mid-way between category A and C. Category A needs the most rigorous control, C requires minimum attention and B deserves less attention than A but more than C.
- The order quantity problem relates to the determination of the quantity of inventory which should be ordered. The economic order quantity (EOQ) is that level of inventory order which minimises the total cost associated with inventory management. Symbolically, EOQ = $\sqrt{2AB/C}$.

- The re-order point is that level of inventory when a fresh order should be placed with suppliers to procure additional inventory equal to the EOQ. It is that inventory level which is equal to the consumption during the lead time plus safety stock.
- Safety stocks are the minimum additional inventory which serve as a safety margin to meet an unanticipated increase in usage resulting from an unusually high demand and/or an uncontrollable late receipt of incoming inventory.
- JIT, as an innovative manufacturing system, refers to acquiring materials and manufacturing goods only as needed to fill customer orders. Also called lean production system, it is a demand-pull manufacturing system because each component in a production line is produced as soon as and only when needed by the next step in the production line.
- However, it is more than an approach to inventory management. It is a philosophy of eliminating non-value-added activities.
- The benefits of JIT are in addition to lower carrying cost of inventory, improved quality, reduced rework, faster delivery and so on.
- The measures of performance that managers use to evaluate and control JIT are personal observations, financial, and non-financial measures.
- The effects of JIT on costing system are reduced overheads and direct tracing of some indirect costs.

CHAPTER 17

Learning Objectives

1. Review the key features and characteristics of, and the costs associated with, trade credit as a source of working capital financing
2. Describe the various forms of bank credit and the modes of security and outline a rating and scoring model used by banks to assess borrowers for lending
3. Explain the key features of commercial papers (CPs) and certificates of deposits (CDs) as sources of working capital financing
4. Analyse the key features of factoring and evaluate its role in working capital financing

Chapter Structure

Section 1 Trade Credit
Section 2 Bank Credit
Section 3 Commercial Papers
Section 4 Certificate of Deposits (CDs)
Section 5 Factoring

Summary

- Typically, working capital requirements/current assets are financed by a combination of long-term and short-term sources. The important traditional short-term sources of current assets financing are trade credit and bank credit. Two newly emerging sources of working capital finance are factoring and commercial papers.
- Trade credit represents credit extended by suppliers of goods and services in the normal course of transactions of the firm. As cash is not paid immediately for purchase but after an agreed period of time, the deferral of payment (trade credit) represents a source of finance for credit purchases (current assets). It does not involve any explicit interest charge/cost. The implicit cost of trade credit depends on the terms offered by the supplier of goods. When the terms include cash discount for prompt payment, the cost of trade credit is generally very high beyond the discount period.
- Bank credit is the single most important institutional source of working capital finance. It is provided mainly in three forms (i) cash credit/overdraft, (ii) loans, and (iii) purchase/discount of bills. Of these, loans contribute the most important component. The security for working capital advances by banks is in the form of hypothetication or pledge.
- Commercial papers which are unsecured promissory notes issued by firms which enjoy high credit rating are emerging as an innovative short-term source of current assets financing.
- Certificates of deposit is negotiable instrument issued in demat form or as usance promissory note for funds deposited at banks/FIs for a specified time period. It is a marketable receipt of funds. The framework of CD market is prescribed by the RBI.
- Factoring involves sale of accounts receivables to a factor who charges a commission, bears the credit risk associated with the accounts receivable purchased by it and provides funds in advance of collection and, thus, finances receivables.

CHAPTER 18

Learning Objectives

1. Understand the concepts, measurement and behaviour of operating, financial and combined leverage and the relationship between them
2. Discuss the EBIT-EPS approach to compare alternative capital structures using both algebraic determination and graphic presentation
3. Explain the relationship between total leverage and total risk of a firm

Chapter Structure

Section 1 Operating Leverage
Section 2 Financial Leverage
Section 3 Combined Leverage: Total Risk

Summary

- Leverage refers to the use of an asset or source of funds which involves fixed costs or fixed returns. As a result, the earnings available to the shareholders/owners are affected as also their risk. There are three types of leverage, namely, operating, financial and combined.
- Leverage associated with asset acquisition or investment activities is referred to as the operating leverage. It refers to the firm's ability to use fixed operating costs to magnify the effect of changes in sales on its operating profits (EBIT) and results in more than a proportionate change (±) in EBIT with change in the sales revenue.
- Degree of operating leverage (DOL) is computed in two ways: (i) Percentage change in EBIT/Percentage change in sales and (ii) (Sales – Variable costs)/EBIT.
- The operating leverage is favourable when increase in sales volume has a positive magnifying effect on EBIT. It is unfavourable when a decrease in sales volume has a negative magnifying effect on EBIT. Therefore, high DOL is good when sales revenues are rising and bad when they are falling.
- The DOL is a measure of the business/operating risk of the firm. Operating risk is the risk of the firm not being able to cover its fixed operating costs. The larger is the magnitude of such costs, the larger is the volume of sales required to recover them. Thus, the DOL depends on fixed operating costs.
- Financial leverage is related to the financing activities of a firm. It results from the presence of fixed financial charges (such as interest on debt and dividend on preference shares). Since such financial expenses do not vary with the operating profits, financial leverage is concerned with the effect of changes in EBIT on the earnings available to equity-holders. It is defined as the ability of a firm to use fixed financial charges to magnify the effect of changes in EBIT on the earnings per share (EPS).
- The degree of financial leverage (DFL) can be computed in the following ways:
  (i) DFL = Percentage change in EPS/Percentage change in EBIT.
  (ii) DFL = EBIT/(EBIT – I), when debt is used.
  (iii) DFL = EBIT/[EBIT – I – $D_p/(1 - t)$], when debt as well as preference capital is used.
  (iv) DFL = EBIT/[EBIT – I – $(D_p + D_t)/(1 - t)$], when dividends paid on preference share capital are subject to dividend tax.
- Financial leverage involves the use of funds obtained at a fixed cost in the hope of increasing the return to the equity-holders. When a firm earns more on the assets purchased with the funds than the fixed cost of their use, the financial leverage is favourable. Unfavourable leverage occurs when the firm does not earn as much as the funds cost.

- High fixed financial costs increase the financial leverage and, thus, financial risk. The financial risk refers to the risk of the firm not being able to cover its fixed financial costs. In case of default, the firm can be technically forced into liquidation. The larger is the amount of fixed financial costs, the larger is EBIT required to recover them. Thus, the DFL depends on fixed financial costs.
- To devise an appropriate capital structure, the amount of EBIT under various financing plans should be related to EPS. The EBIT-EPS analysis is a widely-used method of examining the effect of financial leverage/use of debt. A financial alternative that ensures the largest EPS is preferred, given the level of EBIT.
- Financial break-even point (BEP) represents a point at which before-tax earnings are equal to the firm's fixed financial obligations. Symbolically, it is computed as follows: $[I + D_p + D_t)/(1 - t)]$. In other words, at financial BEP, EPS is zero.
- The EBIT level at which the EPS is the same for two alternative financial plans is known as the indifference point/level. Beyond the indifference level of EBIT, the benefits of financial leverage begin to operate with respect to EPS.
- The indifference point (IP) can be determined by using the following equations:
  (a) For a new company
  (i) $\frac{X(1-t)}{N_1} = \frac{(X-I)(1-t)}{N_2}$ (Equity versus Debentures)
  (ii) $\frac{X(1-t)}{N_1} = \frac{X(1-t) - D_p(1+D_t)}{N_3}$ (Equity versus Preference shares)
  (iii) $\frac{X(1-t)}{N_1} = \frac{(X-I)(1-t) - D_p(1+D_t)}{N_4}$ (Equity versus Preference shares and Debentures)
  (b) For an existing company (having existing debt)
  $\frac{(X-I_1)(1-t)}{N_1} = \frac{(X-I_1-I_2)(1-t) - D_p(1+D_t)}{N_4}$ (Equity versus Preference shares and Debentures)
- The indifference point can also be determined graphically. In order to graph the financial plan, two sets of EBIT-EPS coordinates are required for each financial plan. The point at which the two lines intersect is the IP.
- The greater is the likely level of EBIT than the IP, the stronger is the case for using levered plan (debt) to maximise the EPS. Conversely, the lower is the likely level of EBIT in relation to IP, the unlevered (equity) plan would be more useful from the perspective of EPS.
- The IP can be computed using market value (instead of EPS) as the basis. Under this method, the IP is that level of EBIT at which market price of the share (MPS) is the same for two alternative financial plans. Symbolically,
$$P/E_1\left[\frac{X(1-t)}{N_1}\right] = P/E_2\left[\frac{(X-I)(1-t) - D_p(1+D_t)}{N_4}\right]$$
(Equity versus preference shares and debentures)
- Combined leverage (DCL) is the product of operating and financial leverage. It indicates the effect that changes in sales will have on EPS. Symbolically, it can be computed by the following methods:
  (i) DCL = DOL × DFL
  (ii) DCL = Percentage change in EPS/Percentage change in sales
  (iii) DCL = (Sales – Variable costs)/(EBIT – *I*)
- Combined leverage is a measure of the total risk of the firm. To keep the risk within manageable limits, a firm which has high degree of operating leverage should have low financial leverage and *vice-versa*.

CHAPTER 19

Learning Objectives

1. Review the assumptions, definitions and symbols relating to capital structure theories
2. Explain the major capital structure theories—Net Income Approach, Net Operating Income Approach, Modigliani and Miller (MM) Approach and Traditional Approach—and evaluate them to explore the relationship between leverage and cost of capital from the standpoint of valuation

Chapter Structure

Section 1 Capital Structure Theories
Section 2 Net Income Approach
Section 3 Net Operating Income (NOI) Approach
Section 4 Modigliani-Miller (MM) Approach
Section 5 Traditional Approach

Summary

- Capital structure refers to the mix or proportion of different sources of finance (debt and equity) to total capitalisation. A firm should select such a financing-mix which maximises its value/the shareholders' wealth (or minimises its overall cost of capital). Such a capital structure is referred to as the optimum capital structure.
- Capital structure theories explain the theoretical relationship between capital structure, overall cost of capital *(*k_0) and valuation (V). The four important theories are: (i) Net income (NI) approach, (ii) Net operating income (NOI) approach, (iii) Modigliani and Miller (MM) approach and (iv) Traditional approach.
- According to the NI approach, capital structure is relevant as it affects the k_0 and V of the firm. The core of this approach is that as the ratio of less expensive source of funds (i.e., debt) increases in the capital structure, the k_0 decreases and V of the firm increaseas. With a judicious mixture of debt and equity, a firm can evolve an optimum capital structure at which the k_0 would be the lowest, the V of the firm the highest and the market price per share the maximum.
- The NOI approach is diametrically opposite to the NI approach. The essence of this approach is that capital structure decision of a corporate does not affect its cost of capital and valuation, and, hence, irrelevant.

  The main argument of NOI is that an increase in the proportion of debt in the capital structure would lead to an increase in the financial risk of the equityholders. To compensate for the increased risk, they would require a higher rate of return (k_e) on their investment. As a result, the advantage of the lower cost of debt would exactly be neturalised by the increase in the cost of equity.

  The cost of debt has two components: (i) explicit, represented by rate of interest, and(ii) implicit, represented by the increase in the cost of equity capital. Therefore, the real cost of debt and equity would be the same and there is nothing like an optimum capital structure.
- Modigliani and Miller (MM) concur with NOI and provide a behavioural justification for the irrelevance of capital structure. They maintain that the cost of capital and the value of the firm do not change with a change in leverage.

- They contend that the total value of homogeneous firms that differ only in respect of leverage cannot be different because of the operations of arbitrage. The arbitrage refers to the switching over operations, that is, the investors switch over from the over-valued firm (levered firm) to the under-valued firms (unlevered). The essence of arbitrage is that the investors (arbitragers) are able to substitute personal or home-made leverage for corporate leverage. The switching operation drives the total value of the two homogeneous firms equal.
- The basic premises of the MM approach, in practice, are of doubtful validity. As a result, the arbitrage process is impeded. To the extent, the arbitrage process is imperfect, it implies that the capital structure matters.
- MM contend that with corporate taxes, debt has a definite advantage as interest paid on debt is tax-deductible and leverage will lower the overall cost of capital. The value of the levered firm (V_1) would exceed the value of the unlevered firm (V_u) by an amount equal to levered firm's debt multiplied by tax rate.
- Bankruptcy costs arise due to a firm's inability to meet the promised payments of interest and principal. These costs, sometimes, may lead to its liquidation.
- Bankruptcy costs are of two types: direct and indirect. Direct bankruptcy costs are the legal and administrative costs associated with the bankruptcy proceedings of the firm. Indirect bankruptcy costs are the costs of avoiding a threat to bankruptcy which, in turn, causes valuable employees to leave, suppliers shy of granting credit, customers seeking more reliable suppliers and lenders demanding higher interest rates. As a result, normal business operations are disrupted and sales are adversely affected.
- Bankruptcy costs can be exorbitant and a disincentive to use excessive levels of debt. Primarily due to these costs, the use of debt beyond safe limits offsets the tax advantage of using debt.
- Bankruptcy costs depress the value of levered firm (V_l). MM suggest $V_l = V_u + B_t$. The $V_l = V_u + B_t$ – Bankruptcy Costs.
- Trade-off theory on capital structure trades off the advantages of debt financing (interest tax shield) against the costs of financial distress (consisting of higher interest rates and bankruptcy costs). It warns against the excessive use of debt.
- While symmetric information refers to a situation in which inside managers and outside investors have identical information about business operations and future prospects of a firm, asymmetric information implies a situation in which managers have more information than the investors do.
- Signalling theory is based on the premise of asymmetric information. The theory suggests that a corporate with favourable prospects would avoid selling shares as future increase in profits would tend to increase share prices. The advantage of increase in share prices would be shared with the new equity shareholders, if equity shares have been used as a source of financing. Debt financing is a positive signal to the market for upward trend of share price. Equity shares should be used to finance the projects if prospects of a firm are not good. It enables existing shareholders to have new subscribers to share the losses.
- According to signalling theory, debt issues are considered as good news and share issues as bad news. Since issue of shares causes a decline in share prices, the corporates should maintain reserve borrowing capacity by keeping relatively low levels of debt to finance profitable investment projects in the future.
- The pecking-order theory enumerates the preferred order of raising finances normally followed by the corporates in practice. These choices in order of preference are: (1) retained earnings, (2) non-convertible debt/straight debentures, (3) preference shares, (4) hybrid securities like convertible bonds and (5) equity.
- The suggestions of pecking-order theory are in conformity with the signalling theory and the presence of asymmetric information. The rationale for the first preference for retained earnings is that corporates would like to avoid flotation costs associated with raising funds externally.

- The major implications of pecking order theory are: (1) It, by and large, disregards target/optimal capital structure concept (2) Profitable firms depend more on retained earnings to finance investment projects and (3) Tax shield on debt is of secondary importance.
- The traditional approach is mid-way between the two extreme (the NI and NOI) approaches. The crux of this approach is that through a judicious combination of debt and equity, a firm can increase its value (V) and reduce its cost of capital (k_0) upto a point. However, beyond that point, the use of additional debt will increase the financial risk of the investors as well as of the lenders and as a result will cause a rise in the k_0. At such a point, the capital structure is optimum. In other words, at the optimum capital structure the marginal real cost of debt (both implicit and explicit) will be equal to the real cost of equity.

CHAPTER 20

Learning Objectives

1. Understand the key factors having a bearing on the choice of an appropriate capital structure
2. Illustrate EBIT-EPS analysis and coverage ratio as an approach to design capital structure
3. Explain cash flow analysis as an approach to set debt policy for a firm
4. Analyse financing alternatives from the viewpoint of tax planning
5. Outline capital structure practices by corporates in India

Chapter Structure

Section 1 Profitability Aspect
Section 2 Liquidity Aspect
Section 3 Control
Section 4 Leverage Ratios For Other Firms in the Industry
Section 5 Nature of Industry
Section 6 Consultation with Investment Bankers and Lenders
Section 7 Maintaining Manoeuverability For Commercial Strategy
Section 8 Timing of Issue
Section 9 Characteristics of the Company
Section 10 Tax Planning

Summary

- A host of factors, both quantitative and qualitative, including subjective judgment of financial managers, have a bearing on the determination of an optional capital structure of a firm. They are not only highly complex but also conflicting in nature and, therefore, cannot fit entirely into a theoretical framework. Moreover, the weights assigned to various factors also vary widely, according to conditions in the economy, the industry and the company itself. Therefore, a corporate should attempt to evolve an appropriate capital structure, given the facts of a particular case.
- The key factors relevant to designing an appropriate capital structure are: (i) profitability,(ii) liquidity, (iii) control, (iv) leverage ratios in industry, (v) nature of industry, (vi) consultation with investment banks/ lenders, (vii) commercial strategy, (viii) timing, (ix) company characteristics and (x) tax planning.
- Given the objective of financial management to maximise the shareholders wealth, a corporate should carry out profitability analysis in terms of determining the amount of EBIT (indifference point) at which its MPS is identical under two proposed financial plans. In general, the higher the level of EBIT than the indifference point and the lower the probability of its downward fluctuation, the greater is the amount of debt that can be employed by a corporate.

  Coverage ratio can also be used to judge the adequacy of EBIT to meet the firm's obligations to pay financial charges, interest on loan, preference dividend and repayment of principal. A higher ratio implies that the firm can go for larger proportion of debt in its capital structure.
- Liquidity position of a firm is analysed by cash flow analysis. One measure relates the ratio of fixed financial charges to net cash inflows. A firm can afford higher debt if the ratio is high.

  Another measure to determine the adequacy of cash flows to meet the fixed obligations in cash budget. A cash budget should be prepared for a range of possible cash inflows with a probability attached to each of them. Since the probability of various cash flow pattern is known, the firm can

determine the level of debt it can employ and still remain within an insolvency limit tolerable to the management. The impact of alternative debt policies should also be examined under adverse circumstances/recession conditions.

- To retain control over management, a firm would prefer use of debt to equity.
- The debt-equity ratio of a firm should be similar to those of other companies in the industry.
- In case sales are subject to wide fluctuations, a firm should employ less debt. Firms subject to keen competition should prefer a greater proportion of equity. The corporates in industry groups which are at their infancy should rely more on equity capital.
- Investment analysts/bankers/institutional investors understand the capital market better as well as requirements of investors/lenders. Their opinion is also useful in designing capital structure.
- An appropriate capital structure should provide room for flexibility not only in obtaining funds but also in refunding them.
- Public issue of share as well as debt capital should be made at a time when the state of the economy as well as the capital market is ideal to provide the funds. For instance, it will be useful to postpone borrowings if decline in interest rates is expected in the future.
- The characteristics of company, *inter-alia,* in terms of size and credit standing are decisive in determining its capital structure. While large firms enjoying a high credit standing among investors are in a better position to obtain funds from the sources of their choice, the relatively small firms, new firms and firms having poor credit standing have limited option in this regard.
- The choice of an appropriate debt policy involves a trade-off between tax benefits and the cost of financial distress. Moreover, the management should consider the implicit cost of the tax subsidy in using debt.

CHAPTER 21

Learning Objectives

1. Define 'financial system' and describe its three main components—financial assets/instruments, financial intermediaries/institutions and the two key financial markets, namely, capital and money markets
2. Compare and contrast the two parts of the capital/securities markets—stock exchanges/secondary market and new issue/primary market
3. Discuss the three vital functions of secondary markets—nexus between savings and investments, market place and continuous price formation
4. Understand the triple-service-functions of primary market—origination, underwriting and distribution—and the methods by which issues are made in the primary market

Chapter Structure

Section 1 Relationship Between New Issue Market Andstock Exchange
Section 2 Functions of Stock/Secondary Markets/ Exchanges
Section 3 Functions of New Issues/Primary Market

Summary

- The financial system consisting of a variety of financial instruments, financial intermediaries, and financial markets related in a systematic manner provides the principal mechanism by which savings are transformed into investments.
- A financial instrument/asset/security represents claims against the future income/wealth of an entity. The financial assets are: (i) direct (e.g. shares and debentures of manufacturing companies), (ii) indirect (e.g. units of mutual funds) and derivatives (e.g. futures and options).
- Financial intermediaries act as a link between savers and investors. Their main function is to convert a direct/primary security into an indirect security. In the process of conversion, they offer to the investors the benefits of convenience, low risk, expert management and lower risk. The indirect securities offer to the investors better investment alternative than the direct securities by pooling which they are created.
- Financial markets facilitate transfer of funds from savers to investors. They are a market for creation and exchange of financial assets. The two key financial markets are money market and capital/ securities market.
- The money market is a market for short-term funds having maturities of one year or less. Short-term marketable securities are traded in the money market.
- Capital market is the market for long-term funds. The backbone of the market is formed by the securities markets/exchanges comprising the new issue markets and the stock exchanges.
- The new issue/primary market and secondary market/stock market/exchange differ from each other organisationally as well as in the nature of functions performed by them. While the primary market deals in new securities, that is, securities which were not previously available and are offered to the investors for the first time, the stock market is a market for old securities defined as those already issued and granted stock exchange quotations/listing. Functionally, they also differ in that the new issue market supplies funds to corporate enterprise directly but the secondary markets play only an indirect role in industrial financing by providing liquidity to investments already made.

- The two parts of the securities market have organisational differences as well. The stock exchange has a physical existence and is located in a particular geographical area. The new issue market does not have any organisational set up in any particular place and is recognised only by the specialist institutional services that it renders to the lenders/borrowers of capital funds at the time of any particular operation.
- The new issue market and the stock exchanges are inseparably interconnected. The securities issued in the primary market are invariably listed on a recognised stock exchange for dealings in them. Moreover, the stock exchanges exercise considerable control over the organisation of new issues in terms of regulatory framework relating to the listing of securities. Further, economically, the behaviour of the stock exchange as reflected in the prices of listed securities has a significant bearing on the level of activity in the new issue market in terms of its response to issue of capital. Similarly, the price of new issues are greatly influenced by the price movements in the stock market.
- The stock markets, as an integral part of the industrial securities market, discharge three vital functions in the orderly growth of capital formation. First and foremost, they are a nexus between the savings and investments of the community. They also provide a market price for purchase/sale of securities. The process of continuous price formation is the third function discharged by the stock exchanges.
- The main function of the new issue market, namely, the channelling of investible funds into industrial enterprises, is divided, in operational terms, into three distinct services: (i) Origination, (ii) Underwriting and (iii) Distribution. The new issue market facilitates the transfer of resources of providing specialist institutional facilities to perform this *triple-service function.*
- The origination functions cover the work of investigation and analysis and processing of new issue proposals. Apart from a careful study of technical, economic, financial and legal aspects of the issuing companies to ensure that it warrants the backing of the issue houses/merchant banks/originators, it also refers to advices relating to the important aspects of the issue proposal such as class of security to be issued, price of an issue, timing and magnitude of issue, methods of flotation and so on.
- The underwriting service provided by the new issue market organisation is a form of a guarantee that the issue would be sold by eliminating the risk arising out of uncertainty of public response.
- The distribution of securities is undertaken by brokers and dealers in securities who maintain regular and direct contact with the investors.
- The issue mechanism consists of five methods of flotation of securities: (i) Public issue through prospectus, (ii) Offer for sale, (iii) Placement, (iv) Rights issues and (v) Tender/Book-building. Under the first method, issuing companies offer the securities directly to the general public at a stated price. The cost of raising capital through this method is high. It is suitable for large issues. The offer for sale and placement methods are indirect methods of sale of securities through financial/investment institutions to the investing public. They are suitable for small issues of capital. The rights issue is a method to sell securities to the existing shareholders of a company. The pricing of issues is left to the investors in book building method.

CHAPTER 22

Learning Objectives

1. Discuss the general features of equity/ordinary shares, the important aspects of preemptive rights of shareholders and the merits and demerits of ordinary share financing
2. Review the procedure relating to equity shares and securities convertible/exchangeable into equity shares in India in terms of common conditions for public/rights issues, provisions as to public issues, rights issues, preferential issues and qualified institutional placement

Chapter Structure

Section 1 Fundamentals of Equity Shares
Section 2 Issue Procedures

Summary

- Equity/ordinary share capital represents ownership capital and its owners—equity-holders/ordinary shareholders—share the reward and risk associated with the ownership of corporate enterprises.
- The ordinary shares have some special features in terms of the rights and claims of their holders: (i) residual claim to income, (ii) residual claim on assets, (iii) right to control,(iv) pre-emptive rights and (v) limited liability.
- A shareholder can (1) exercise (2) sell in the market and (3) renounce/forfeit his pre-emptive right partially/completely. He does not gain/lose from rights issues. However, he would suffer dilution of financial interest if he does not exercise his pre-emptive right.
- Ordinary share capital is a high-risk-reward source of finance for corporates. The shareholders share the risk, return and control associated with ownership of companies.
- The common conditions for public/rights issues are: general conditions, appointment of intermediaries, filing of offer document, documents submitted before issue opening, draft offer documents made public, issue pricing, fast track issues, issue opening, desptach of material, underwriting, minimum subscription, oversubscription, monitoring agency, manner of calls, allotment/refund, restrictions on further issues, additional requirements for issue of convertible debt instruments (CDIs), rollover, conversion, issue of CDIs for financing and alteration of rights of holders of securities.
- The provisions as to public issues are: eligibility requirements, pricing, promoters contribution, lock-in and minimum offer to public/reservations.
- The main elements of the framework of rights issues are record date, restrictions, letter/abridged letter of offer, pricing and subscription period, pre-issue advertisement and utilisation of funds.
- Preferential issue is an issue of specified securities by a listed issuer to any select group/group of persons on a private placement basis. The main elements of such issues are: conditions, disclosures, allotments, tenure of convertible securities, pricing of shares payment of consideration, lock-in and transferability of lock-in securities/warrants.
- The qualified institutional placement (QIP) is the allotment of shares/ CDIs/warrants and other convertible securities by a listed issuer to QIBs on private placement basis. The main elements of QIP are: conditions, placement document, pricing, allotment restrictions, minimum number of allottees, validity of the special resolution, tenure and transferability.

CHAPTER 23

Learning Objectives

1. Understand the characteristics of term-loans, positive and negative covenants in a loan agreement, loan amortisation and the procedure associated with a term-loan
2. Describe the basic characteristics of corporate debentures/bonds/notes, general features of a debenture issue, bond refunding options, innovative debt instrument, the procedure of issuing debt instruments and rating of debt instruments
3. Define securitisation, describe the general features of securitisation process, credit enhancement, parties to a securitisation transaction, asset characteristics, types of securitised assets, and review mortgage-based securitisation by the National Housing Bank (NHB)

Chapter Structure

Section 1 Term Loans
Section 2 Debentures/Bonds/Notes
Section 3 Securitisation

Summary

- Term loans/term/project finance are negotiated loans between the borrower and the lenders with a maturity of up to 10 years. They are employed to finance acquisition of fixed assets and working capital margin. All term loans are secured. The asset security stipulations are reinforced by a number of positive/affirmative and negative covenants. While negative covenants are (i) asset-related, (ii) liability-related, (iii) cashflow-related and (iv) control-related, the positive covenants relate to maintenance of (i) networth, (ii) level of working capital, (iii) creation of redemption funds and so on. The term loans have to be amortised according to the predetermined schedule. They carry low cost and involve high risk. They have no adverse effect on control but there is a moderate restraint on managerial freedom. Term loans are sanctioned and disbursed by the financial institutions banks/according to the prescribed procedure. Financial institutions appraise a term loan proposal/project from the marketing, technical, financial and managerial angles.
- Debentures represent creditorship securities and debenture-holders are long-term creditors of the company. As long-term source of finance, debentures have some contrasting features compared to equity shares. When they are sold to public, a trustee is appointed through a trust deed/indenture to ensure that the borrower fulfills all contractual obligations. The coupon rate of interest is legally enforceable as well as tax-deductible. A typical non-convertible debenture (NCD) has a maturity of 7-10 years. The redemption of debentures can be accomplished in either of the two ways: (i) debenture redemption reserves (sinking fund) and (ii) call and put (buy-back) provision. They are generally secured by way of an equitable mortgage. The convertible debentures can be partly/fully converted into equity shares. All debentures must be rated by a rating agency. As long-term source of funds, debentures (i) have low cost, (ii) do not dilute control, (iii) involve high risk and (iv) put some restraint on managerial freedom. To improve the attractiveness of debentures, a wide range of innovative instruments have emerged such as deep discount bonds, secured premium notes and floating rate bonds.
- A company offering convertible/non-convertible debt instruments has to comply with the requirements prescribed by the SEBI. These relate to (1) credit rating, (2) debenture trustees, (3) debenture

redemption reserve, (4) distribution of dividends, (5) creation of charge, (6) letter of option, (7) rollover and so on.

- Credit rating of debentures by a rating agency is mandatory. It provides a simple system of gradation by which relative capacities of borrowers to make timely payment of payment and repayment of principal on a particular type of debt instrument can be noted. The main elements of the rating methodology are (1) business risk analysis in terms of industry risk, market position of the issuing entity within the industry, its operating efficiency, and legal position, (2) financial risk analysis as reflected in accounting quality, earnings protection, adequacy of cash flows, financial flexibility and interest and tax sensitivity and (3) management risk. The rating agencies in India are CRISIL, ICRA, CARE and Fitch India.
- Securitisation is the process of pooling and repackaging of homogeneous illiquid financial assets/loans into marketable securities that can be sold to investors. The parties to a securitisation transaction are (1) originator, (2) SPV, (3) investors, (4) obligor, (5) rating agency,(6) administrator/servicer, (7) agent/ trustee and (8) structurer. Securitisation can be implemented by three kinds of instruments differing mainly in their maturity characteristics, namely, (i) PTCs, (ii) PTS and (iii) stripped securities. These securities fall into two groups: (a) ABS and (b) MBS.

CHAPTER 24

Learning Objectives

1. Understand the basic rights of preference shareholders, the features of preferences shares and the advantages and disadvantages of preference share financing
2. Describe the general features of convertible debentures and illustrate the procedure for determining the value of both optionally convertible debentures and compulsorily convertible debentures
3. Explain the basic characteristics of warrants, the implied price of a warrant and the value of a warrant—theoretical, market and warrant premium
4. Define option and explain call and put option

Chapter Structure

Section 1 Preference Share Capital
Section 2 Convertible Debentures/Bonds
Section 3 Warrants
Section 4 Options

Summary

- A hybrid source of financing partakes some features of equity shares and some features of debt instruments. The important hybrid instruments are: preference shares, convertible debentures/bonds, warrants and options. The issue procedure for these instruments is similar to the raising of equity shares.
- The main attributes of preference shares (i) prior claim on income/assets, (ii) cumulative dividends, (iii) redeemability, (iv) voting rights when preference dividend is in arrears, (v) participation in surplus profits/excess assets and so on.
- Preference capital involves high cost, does not dilute owners control of the company, has negligible risk and puts no restraint on managerial freedom. The shareholders receive modest return and are vulnerable to arbitrary managerial actions. It is not a popular source of long-term finance in India.
- Convertible debentures (CDs) confer on their holders the right/option to convert them partly (PCDs)/ fully (FCDs) into equity at a later date on specified terms/conditions.
- Their operational features, namely, conversion ratio, conversion premium and conversion timing are specified in advance. The call option gives the issuer the right to redeem to redeem the debentures prematurely. The investor has also the right to prematurely sell them back.
- The value of a compulsorily/fully/partly CDs,

$$V_0 = \sum_{t=1}^{n} \frac{I_t}{(1+K_d)^t} + \frac{aP_i}{(1+K_e)^i} + \sum_{j=m} \frac{F_j}{(1+K_d)^j}$$

- The cost of a PCDs, $Kc = S_0 = \sum_{t=1}^{n} \frac{I_t\,(1-T)}{(1+K_c)^t} + \frac{aP_i b}{(1+K_c)^I} + \sum_{j=m}^{n} \frac{F_j}{(1+K_c)^j}$
- The value of optionally CDs depends upon three factors: (i) straight debenture value, (ii) conversion value and (iii) option value.
- The reasons for the popularity of CDs are (1) cashflow matching of firms, (2) financial synergy and (3) mitigation of agency problem.

- A warrant entitles its holders to subscribe to the equity capital of a company during a specified period at a stated/particular/striking price. It differs from a CD in that while debenture and conversion option are irreparable a warrant can be detached. Unlike CDs, warrants can be offered independently also.
- The important features of warrants are (1) exercise, price, (2) exercise ratio and (3) expiry date.
- The implied price of an attached warrant is the price effectively paid for each warrant. It is equal to price of bond with attached warrants less straight debenture/warrant value.
- A warrant has a market value and a theoretical value. The difference between them is the warrant premium.
- The theoretical value of a warrant = $(P_0 - E) \times N$.
- A warrant premium results from a combination of (1) positive investor expectation and (ii) the ability of the investor to obtain larger potential return by trading in warrants instead of under-lying shares.
- Options are not a source of financing like shares, debentures, CDs and warrants. But they do stabilise prices of shares by increasing trading activity in them.
- An option is an instrument that provides to its holders an opportunity to purchase (call option)/sell (put option) specified security/asset at a stated striking price on/before a specified expiration date.

CHAPTER 25

Learning Objectives

1. Define leasing, describe its main features and classification of leasing—finance lease, operating lease, sale and lease back, single investor and leveraged lease, domestic and international lease—and the significance and limitations of leasing
2. Review and illustrate financial evaluation of leasing both from lessee's perspective and lessor's perspective
3. Describe the general features of hire-purchase, comparison of hire-purchase with leasing and instalment payment, and financial evaluation of hire-purchase transaction from the viewpoint of the hirer as well the finance company

Chapter Structure

Section 1 Lease Financing
Section 2 Hire-Purchase Finance

Summary

- Lease is a contractual arrangement under which the owner of an asset (lessor) allows the use of the asset to the user (lessee) for an agreed period of time (lease period) in consideration for the periodic payment (lease rent). At the end of the lease period, the asset reverts back to the owner, unless there is a provision for the renewal of the lease contract.
- Leasing can be classified into four categories: (i) sale and lease back, and direct lease, (ii) single investor lease and leveraged lease, (iii) domestic lease and international lease, and (iv) finance lease and operating lease.
- Sale and lease back arrangement provides for the sale of the asset by the present owner to the lessor who leases it back to the owner (lessee). In contrast, the lessee and the owner of the asset are two different entities in direct lease.
- While a single investor lease involves two parties to the lease transaction, namely, the single investor/ the leasing company (lessor) and the lessee, a leveraged lease involves, besides the lessor and the lessee, a third party (a lender) who ordinarily funds a major share of the asset's price.
- In domestic lease, all parties of a lease transaction are domiciled in the same country. In international lease, parties to the lease transactions are domiciled in different countries.
- Short-term or cancelable leases (at the option of the lessee) are referred to as operating leases while long-term or non-cancellable leases are known as financial leases. The distinction between the two is based on the extent to which the risks and rewards of ownership are trans-ferred from the lessor to the lessee. If a lease transfers a substantial part of the risks and rewards, it is called finance lease; otherwise, it is operating lease.
- The cut-off criterion in India is that if the lease term exceeds 75 per cent of the useful life of the asset or if the present value of the minimum lease rentals exceeds 90 per cent of the fair market value (cost) of the equipment at the inception of the lease, the lease is classified as finance lease.
- Lease financing provides several advantages to the lessee such as hundred per cent financing, tax-based benefits, convenience, better utilisation of own funds, expeditious use of asset, flexibility in lease rentals, and so on.

- Full security, tax benefit, high profitability, trading on equity and so on are the major adv-antages to the lessor.
- Finance lease can be evaluated from the point of view of both the lessee and the lessor. From the perspective of the lessee, leasing should be evaluated as a financing alternative to borrow and buy. The decision-criterion requires comparison of the present value (PV) of cash outflows after taxes under the leasing option *vis-á-vis* borrowing-buy alternative. The alternative with the lower PV should be selected.
- The Net Advantage of Leasing (NAL) approach is the alternate approach to evaluate finance lease. The benefits from leasing are compared with cost of leasing.

  The benefits from leasing are: (i) Investment cost of asset (saved), (ii) Plus PV of tax shield on lease payment, discounted by k_c and (iii) Plus PV of tax shield on management fee, discounted by k_c.

  The cost of leasing are: (i) Present value of lease rentals, discounted by k_d, (ii) Plus management fee, (iii) Plus PV of depreciation shield foregone, discounted by k_c, (iv) Plus PV of salvage value of asset, discounted by k_c and (v) Plus PV of interest shield, discounted by k_c.

  In case NAL is positive (benefits > costs), leasing alternative is preferred.
- For the lessor, lease decision is akin to a capital budgeting decision. The leasing is viable when the PV of cash inflows after taxes (CFAT) accruing to him exceeds the cost of asset. The CFAT are discounted at the weighted average cost of capital.
- The NAL approach can also be used by the lessor to assess the financial viability of the lease decision. The NAL to a lessor = Present value of lease payment *plus* (i) Present value of management fee, (ii) Present value of depreciation tax shield, (iii) Present value of net salvage value, (iv) Present value of tax shield on initial direct costs, *minus*, (i) Initial investment, (ii) Present value of tax on lease payments, (iii) Present value of tax on management fee, and (iv) Present value of initial direct cost.
- The break-even lease rental is the rental at which the lessee is indifferent to the choice between the option of leasing and buying and borrowing. At this level, the NAL is zero. In a way, it represents the maximum lease rental which the lessee is willing to pay and constitutes an important input in the negotiation/determination of the lease rental.
- From the point of view of the lessor, the break-even lease rental is the minimum which he can accept in lieu of leasing the equipment. At this level of rental, the NAL/NPV(L) to the lessor is zero. The lease-related cash flow streams relevant to the computation of the NAL are initial investment and often direct costs, income tax on lease payments, management fee, lease payments, tax shield on depreciation and residual value.
- The lease rental is determined on the basis of the negotiation between the lessor and the lessee. The difference between the break-even lease rentals to the lessee and the lessor represents the spread/ range for negotiation of lease rentals. A lease rental within the range ensures a positive NAL both to the lessor and the lessee.
- Hire-purchase is an agreement relating to a transaction in which goods are let on hire, the purchase price is to be paid in instalments and the hirer is allowed the option to purchase the goods, paying all the instalments. Though the option to purchase the goods is allowed in the very beginning, it can be exercised only at the end of the agreement. It implies ownership is transferred at the time of sale.
- The ownership of the goods passes on to the purchaser simultaneously with the payment of the initial/ first instalment in instalment sale. The hire-purchase also differs from the instalment sale in terms of the call option and right of termination in the former but not in the latter.
- Hire-purchase and leasing as modes of financing are different in several respects such as ownership of the asset, its capitalisation, depreciation charge, extent of financing, tax treatment, and accounting and reporting.
- Hire-purchase contract, basically, requires two parties, namely, the intending seller and the intending buyer. When such a sales is executed through the involvement of finance companies, the hire-purchase contracts involve three parties: the financier, the seller and the buyer.

- The decision-criterion for evaluation of a hire-purchase deal from the point of view of hirer is the cost of hire-purchase *vis-á-vis* the cost the leasing.

  The cost of hire-purchase consists of: (i) Cash down payment, (ii) Plus service charges, (iii) Plus PV of hire-purchase payment (discounted by cost of debt), (iv) Minus PV of depreciation tax shield, discounted by cost of capital and (v) Minus PV of the net salvage value discounted by the cost of capital.

  The cost of leasing consists of: (i) Lease management fee, (ii) Plus PV of lease payments discounted by k_d, (iii) Less PV of tax shield on lease payments and lease management fee discounted by k_c and (iv) Plus PV of interest tax shield on hire-purchase discounted by k_c. The alternative with lower cost is preferred.
- The decision-criteria from the viewpoint of hire vendor/financing company is based on a comparison of the net present values of the hire-purchase and the leasing alternatives. The finance company would choose the financing plan with the higher NPV.

CHAPTER 26

Learning Objectives

1. Discuss the basic features of venture capital: selection of investments, stages of financing, financial analysis, structuring the deal/financing instruments; investment monitoring/nurturing in terms of style, objectives of after care and techniques; portfolio valuation; structure and legal framework; and exit of investments
2. Review of Indian venture capital scenario in terms of the SEBI regulations

Chapter Structure

Section 1 Theoretical Framework[1]
Section 2 Indian Venture Capital Scenario

Summary

- Venture capital, as a fund-based financial service, has emerged the world over to fill gaps in the conventional financial mechanism, focusing on new entrepreneurs, commercialisation of new technologies and support to small/medium enterprises in the manufacturing and the service sectors. Over the years, the concept of venture capital has undergone significant changes. The nascent venture capital industry in India can profitably draw upon the experiences of the developed countries.
- The characteristics features of venture capital differentiate it from other capital investments. It is basically equity finance in relation to new listed companies and debt financing is only supplementary to ensure running yield on the portfolio of the venture capitalists/capital institution (VCIs). It is long-term investment in growth-oriented small/medium firms. There is a substantial degree of active involvement of VCIs with the promoters of venture capital undertakings (VCUs) to provide, through a hands-on approach, managerial skills without interfering in the management. The venture capital financing involves high risk-return spectrum. It is not technology finance though technology finance may form a sub-set of such financing. Its scope is much wider.
- The first step in venture capital financing is the selection of the investment. It includes stages of financing, methods to evaluate deals and the financial instruments to structure a deal. The stages of financing as differentiated in venture capital industry are early stage and later stage. Included in early stage are seed capital/pre-start-up, start-up and second-round financing. The later stage of venture capital financing covers mezzanine/development capital, bridge/expansion, buyouts and turnarounds. The venture investments are generally *idea-based* and *growth-based*. Of the three methods of financial analysis/evaluation which VCIs can adopt, namely, conventional venture capital valuation method, the first Chicago method and the revenue multiplier method, the first Chicago method gives better results. The structuring of venture capital deals is a mix of the available financial instruments: equity and debt. The equity instruments include ordinary, non-voting, deferred ordinary, preference, warrants, cumulative convertible preference, participating preference and so on. The main types of debt instruments are conventional loan, conditional loan, income notes, NCDs, PCDs, zero interest bonds, secured premium notes and deep discount bonds.
- The after-care stage of venture capital financing relates to different styles of nurturing, its objectives and techniques. The style of nurturing which refers to the extent of participation by VCIs in the affairs of the venture, falls into three broad categories: hands on, hands off and hands holding. Some of the important techniques to achieve the objectives are personal discussion; plant visits, nominee directors, periodic reports and commissioned studies.

- The valuation of the venture capital portfolio to monitor and evaluate the performance of the equity investment is done by using cost method or market value-based methods consisting of quoted market value method and fair market value method. The methods of valuing debt instruments vary with the nature of such instruments.
- The alternative forms in which VCIs can be structured are: limited partnership, company, trust and small business investment company.
- The last stage in venture capital financing is the exit to realise the investment so as to maximise profit/minimise loss. The alternative routes for disinvestments of equity/quasi-equity instruments are market flotation, earnout, trade sales, takeout and liquidation.
- The venture capital industry in India is of relatively recent origin. Before its emergence, the DFIs had partially been playing the role of venture capitalists by providing assistance for direct equity participation to ventures in the pre-public stage and by selectively supporting new technologies. The concept of venture capital was institutionalised/operationalised in November 1988 when the CCI issued guidelines for setting up of VCFs for investing in unlisted companies and to avail of a concessional facility of capital gains tax. These guidelines, however, construed venture capital rather narrowly as a vehicle for equity-oriented finance for technological upgradation and commercialisation of technology promoted by relatively new entrepreneurs. These were repealed on July 25, 1995. Recognising the growing importance of venture capital, the Government announced a policy for governing the establishment of domestic VCFs. They were exempted from tax on income by way of dividends and long-term capital gains from equity investment in the specified manner and in conformity with stipulations in unlisted companies in the manufacturing sector, including software units, but excluding other service industries. To augment the availability of venture capital, guidelines were issued in September, 1995 for overseas venture capital investments in the country. After empowerment to register and regulate VCFs, SEBI issued VCF Regulations, 1996.
- The VCFs/FVCIs operate in India within the framework of SEBI regulations. The VCFs should disclose the investment strategy at the time of their registration. They cannot invest more than 25 per cent of the corpus in one VCU. They are prohibited from investing in associate companies. At least 66.67 per cent of their funds should be invested in unlisted equity/equity linked instruments. Not more than 33.33 per cent of funds may be invested by way of (1) subscription to an initial public offer of a VCU (2) debt/debt instruments, (3) preferential allotment of equity shares of a listed company, (4) equity/equity-linked instruments of a financially weak company and (5) special purpose vehicles created to promote/facilitate investment.
- The VCFs can invest in foreign companies. The eligible VCUs for venture capital financing are service as well as manufacturing entities but NBFCs and gold financing are ineligible.
- The FVCIs are not permitted to invest in NBFCs, gold financing excluding companies engaged in gold financing for jewellery and activities not premitted under the industrial policy of government. They can invest their total funds in one VCU. At least 2/3rd should be invested in unlisted equity/equity linked instruments and not more than one-third can be invested in IPOs/debt instruments/preferential allotment and SPVs.

CHAPTER 27

Learning Objectives

1. Define option and describe the two types of options—call option and put option
2. Discuss the call option payoffs and the put option payoff—returns and losses to the buyers and sellers of options
3. Describe the range/boundaries of the value of call option
4. Enumerate the factors—current share price, exercise price, risk-free rate, time to maturity and price volatility of shares—which determine the worth of a call option
5. Explain and illustrate the Black-Scholes Option Pricing Model

Chapter Structure

Section 1 Option: concept and types
Section 2 Option payoffs
Section 3 Call option boundaries
Section 4 Factors influencing option valuation
Section 5 The Black-Scholes Option Pricing Model

Summary

- Options are a special type of financial contracts under which the buyers of the options have the right to buy or sell the shares/stocks but do not have obligation to do so.
- Essentially, options are of two types: call and put. A call option gives the holder the right, but not the obligation to buy specified stocks at a specified price (known as the exercise price) on or before a specified maturity date. A put option provides the holder the right, but not the obligation to sell securities on or by a certain date at a predetermined exercise price.
- The buyer of an option (of call as well as put) is in a privileged position as he will exercise it when he finds it profitable. In other words, the seller/writer of the option is under obligation to buy or sell the securities in case the buyer decides to exercise his option. The writer of the option runs the risk of loss. For assuming such a risk, he is paid option premium by the option buyer; the higher is the risk, the higher is the option premium.
- Options can either be an European or an American. While an European option can be exercised only on the expiration date, an American option is more flexible in nature and can be exercised at any time up to the expiration date.
- Since the buyer of the option has the right to buy (in the case of call option) and sell (in the case of put option) the stock at a predetermined fixed exercise price, its value at a maturity/expiration date depends on the price of the associated stock on such a date. The value of the call option on the date of maturity is equal to the price of the stock on this date minus the exercise price. It cannot be a negative value as it implies that the call-holder buys the stock at an exercise price (E) which is higher than the market price of the share (S_1). The value of a call option (C_1) on its expiration date is either positive ($S_1 > E$) or zero.
- As the call owner is to pay option premium (P), his profit would be $S_1 - (E + P)$. In case the price of a share is less than or equal to exercise price ($S_1 \leq E$), he incurs loss equivalent to the amount of call option premium paid up-front by him. He is at the break-even point (BEP) when $S_1 - (E + P) =$ zero.

- The put option holder will exercise his right to sell the securities if the price of securities fall below the exercise price at the date of expiration. Accordingly, the value of a put option (P_1) is equal to the difference between the exercise price and stock price ($E - S$). Like call options, put options cannot have negative value as the put-owner will obviously not sell at a price lower than the market price ($E < S_1$). In such a situation, his loss is equal to the put option premium. He is at the BEP when $E - (S_1 + P)$ = zero.
- The option - payoffs are very attractive because while the option owner's loss is limited (to the extent of option premium paid), his gains are not so limited. For instance, in the case of a call option, if the market price of the share turns out to be substantially higher than the exercise price, total profit accruing to him will be substantial, in relation to the investment (of option premium) he has made. In other words, options have magnifying financial impact. This, in turn, is caused by large scale dealing possible under option contracts *vis-à-vis* the investment in shares.
- The value of the option is to be in a certain range. While upper range/bound of a call option can never be more than the price of share, its lower bound/range is either zero or equal to the price of the share less exercise price ($C_0 \geq S_0 - E$) which ever is higher. However, in a real/practical market situation, the upper bound is more a theoretical possibility; it is more close to the lower bound. Its value depends on five factors: (i) current share price, S_0, (ii) exercise price, E, (iii) risk-free rate of return, R_f, (iv) time to expiration, t and (v) price-volatility of stock (measured in terms of variance/ standard deviation).
- The value of call option (C_0) is = $S_0 - E/(1 + R_f)^t$. The value of C_0 is affected positively by increase in current share price, increase in the risk-free rate of return/interest rate and time to expiration of the option; exercise price has a negative relationship with its value. The greater is the price volatility of share, the greater is the value of the option, all other things remaining the same.
- In efficient markets, it is possible for the market participant (say, call-buyer) to establish a riskless hedged position. The payoffs to the investor would be identical whether he invests in shares or goes for a combination of buying risk-free security (say, invest in treasury bills) and call option from the same investment. This situation of identical payoffs enables us to determine the value of call option at the beginning of the period itself (C_0). Difference in payoffs give rise to riskless arbitrage opportunities to investors. In an efficient/well-organised market, significant arbitrages will, of course, be rare.
- The Black-Scholes option pricing model provides a precise formula to determine the value of call as well as put options. Given certain assumption, the BS formula requires input of five variables, namely, spot price of the share, exercise price, short-term risk-free interest rate (continuously compounded), time remaining for expiration and standard deviation. Out of these five variables, the first four are known to the market participants. The fifth variable related to standard deviation can be determined by referring to weekly observations of the share prices in the immediate preceding year. Given the availability of computer package or specifically programmed calculators, the application of BS formula, in practice, is straight forward and widely used by dealers for valuing options on the options exchange.

CHAPTER 28

Learning Objectives

1. Define derivatives and describe their economic functions
2. Discuss forward contracts and their usefulness in hedging and speculation, and limitations of forward contracts
3. Explain the features of future contracts, the distinction between futures and forwards, payoffs for futures and pricing of futures—index futures and stock futures
4. Examine the fundamental characteristics of option contracts, the distinction between futures and options and the option payoffs and pricing of options
5. Summarise the structure of derivative market in India.

Chapter Structure

Section 1 Forward Contracts
Section 2 Futures/Future Contracts
Section 3 Options/Options Contracts

Summary

- Derivative instruments include (a) a security derived from a debt instrument, share, loan, risk instrument or contract for differences or any other form of security and (b) a contract that derives its value from the price/index of prices of underlying securities.
- The economic functions performed by the derivatives markets are: (i) they help in the discovery of the future as well as current prices, (ii) they transfer risk to those who have an apetite for them, (iii) the underlying cash markets witness high trading volumes, (iv) speculative trades shift to a more controlled environment, and (v) they help increase savings and investment in the long run.
- The most common variants of derivatives are forward, futures and options.
- A forward contract is an agreement to buy/sell an asset on a specified date for a specified price. It is very useful in hedging and speculations. A very serious limitation of forward contracts is counterparty risk arising from possibility of default of any one party to the transaction.
- A future contract is an agreement between two parties to buy/sell an asset at a certain time in future at a certain price. It may be offset prior to maturity by entering into an equal but opposite transaction. It eliminates counterparty risk and offers more liquidity.
- Future contracts have linear payoffs. It means that the losses as well as the profit, for the buyer and the seller are unlimited.
- Pricing of futures is done with reference to (1) the cost of carry model, (2) pricing equity index futures and pricing stock futures.
- According to the cost of carry method, the price of a future contract, $F = S + C$.
- Pricing of equity index futures given expected dividend, F = carrying cost/cost of financing the purchase of the portfolio less the present value of dividends.
- Pricing of equity index given expected dividend yield, $F = S(1 + r - q)^T$
- Price of stock futures when no dividend expected = Spot price $\times$ Cost of carry.
- Price of stock future when dividends are expected = Cost of financing the purchase of stock less present value of dividend received.

- An option gives the holder the right but not the obligation to do something.
- Options offer non-linear payoffs in that while the losses for the buyer of the option are limited, the profits are potentially unlimited. For a writer, the pay-off is exactly the opposite.
- The pricing of an option is based on the Black-Scholes Pricing formula:
  $P = X_e^{-rT} (N - d_2) - SN (-d_1)$

CHAPTER 29

Learning Objectives

1. Define corporate governance and discuss the major features of clause 49 of the listing agreement specified by the SEBI
2. Explain the features of corporate governance rating and the rating scale used by ICRA
3. Describe the main elements of the corporate governance voluntary guidelines

Chapter Structure

Section 1 Corporate Governance (Clause 49 Listing Agreement)
Section 2 Corporate Governance Rating
Section 3 Corporate Governance Voluntary (Government) Guidelines, 2009

Summary

- Corporate governance (i) refers to the distribution of rights and responsibilities among different participants is an organisation/corporate/corporate entity such as the Board of Directors, management, stakeholders and other stakeholders such as lenders/creditors and (ii) spells out rules and procedures for making decision on corporate affairs.
- The SEBI has mandated corporate governance as a part of the requirement in Clause 49 of the Listing Agreement between the corporates and the stock exchange(s).
- Clause 49 deals with corporate governance. The main elements of this clause relate to: Board of Directors, Audit Committee, Subsidiary Companies, CEO/CFO Certification, Report on Corporate Governance and Compliance.
- The Board of Directors of the company should consist of at least 50 per cent non-executive directors. At least one-third or one-half of the Board should comprise independent directors in case of non-executive and executive chairman respectively. An independent director means a non-executive director who (a) apart from receiving directors' remuneration, does not have any material pecuniary relationship/ transaction with the company/its promoters/directors/senior management (i.e. personnel who are members of the core management one level below executive directors)/holding company/subsidiary company and associates (b) is not related to promoters/persons occupying management position at the Board/one level below that (c) has not been an executive in the preceding three financial years (d) is/was not a partner/executive during the preceding three years of the statutory/internal audit firm associated with the company/the legal/consulting firm having a material association with the company (e) is not a material supplier/service provider/customer/lessee of the company (f) is not a substantial shareholder owning two per cent or more of the voting shares. Nominee directors would be deemed to be independent directors.
- Fee/compensation including stock options, paid to all non-executive directors should be approved by the shareholders.
- The Board of Directors should meet at least four times a year. A director can be a member of 10 committees or act as chairman of five committees across all companies in which he is a director. The Board should periodically review compliance reports of all laws applicable to the company. It should also lay down a code of conduct for all Board members and senior management, who should affirm compliance with the code on an annual basis.

- A qualified and independent Audit Committee should be set up with at least three member-directors, two-thirds being independent. All members should be financially literate (i.e., they should possess the ability to read and understand the basic financial statements) and at least one member should have accounting or related financial management expertise. The chairman of the audit committee should be an independent director and the company secretary would be its *ex-officio* secretary. The committee should meet at least four times in a year.
- The powers of the Audit Committee should include—investigating any activity within its terms of reference, seeking information from any employee, obtaining outside legal/other professional advice and securing attendance of outsiders with relevant expertise.
- The role of the Audit Committee would include: overview of the financial reporting process to ensure correctness, sufficiency and credibility of the financial statements; to recommend the appointment/ re-appointment/ replacement of auditors and their fee, review with the management (a) the annual and quarterly financial statements for submission to the Board for approval (b) performance of auditors/ adequacy of internal control systems, review the adequacy of internal audit function, review the findings of any internal investigation into suspected fraud/irregularity/failure of internal control systems of a material nature, look into reasons for substantial default in payment to depositors/creditors/debentureholders and so on, review the functioning of the 'whistle blower' mechanism and so on.
- The Audit Committee must review information relating to (i) management discussion/analysis of financial condition/result of operations (ii) statement of significant related party transactions and (iii) letter of internal control weaknesses by the auditors.
- A material non-listed Indian subsidiary company should have on its Board, at least one independent director of the holding company. The minutes of its Board meetings should be placed at the Board meeting of the listed holding company. Its financial statements should also be reviewed by the audit committee of the listed company.
- The disclosure requirements of the corporate governance clause pertain to: basis of related party transactions, disclosure of accounting treatment, risk management, proceeds from public/rights/preferential issues, remuneration of directors, management discussion/analysis report, and information to shareholders on the appointment/reappointment of a director.
- The CEO and the CFO should certify to the Board of Directors that (i) the financial statements present a true and fair view (ii) no transaction is fraudulent, illegal/violative of the code of conduct (iii) they accept full responsibility for establishing/maintaining internal controls and (iv) they have indicated to the auditors/audit committee significant changes in internal control/accounting policies and instances of significant frauds which they became aware of.
- The annual reports should contain a separate section on Corporate Governance. Non-compliance of any mandatory requirement with reasons and the extent of adoption of non-mandatory requirements should be highlighted. Companies should submit a quarterly report signed by the compliance officer/ CFO, to the stock exchanges, within 15 days from the close of the quarter in the prescribed format.
- The company should annex with the directors' report to the shareholders, a certificate from the auditors/company secretaries regarding compliance with the conditions of corporate governance. This should also be sent to the stock exchange, along with the company's annual report. Non-mandatory requirements may be implemented at the discretion of the company.
- The CGR is meant to indicate the relative lend to which an organisation accepts and follows the codes and guidelines of corporate governance practices.
- The emphasis of CGR is on business practices and quality of disclosure standards that address the requirements of regulators and are fair and transparent for its financial stakeholders.
- The key variables that are analysed while arriving at CGR for a corporate are: (a) shareholding structure, (b) governance structure and management process, (c) Board structure and process, (d) stakeholder relationship, (e) transparency and disclosures and (f) financial discipline.
- The CGR scales range between **CGR1** reflecting the highest assurance on the quality of corporate governance and **CGR6** reflecting low level of assurance on the quality of corporate governance.

- The main elements of the Corporate Governance Voluntary (Government) Guidelines are: (i) Board of Directors (ii) Responsibilities of the Board (iii) Audit committee, (iv) Auditors (v) Secretarial audit and (vi) Mechanism for whistle blowing.
- Companies should issue formal letters of appointment to the non-executive as well as independent directors, containing the specified details. They should be disclosed to the shareholders and also placed on the website of the company/concerned stock exchange. The roles and offices of the chairman and the MD/CEO should be separated to promote balance of power. An independent nomination committee should recommend the appointment of independent/non-executive directors. The guidelines followed by the committee should be outlined in the annual report. A person other than a MD/wholetime director, can be independent/non-executive director in a maximum of seven companies.

  A policy for specifying positive attributes of independent directors should be in place. All such directors should provide a certificate of independence which should also be placed on the website of the company/the concerned stock exchange. Their tenure should not exceed six years. A person can be independent director in not more than seven companies. Independent directors should have (i) the option and freedom to interact with the company management frequently and (ii) adequate office space and other resources/support.

  The guiding principle in remunerating the directors is its linking with corporate and individual performance. The companies should have the option of giving a fixed contractual remuneration, not linked to profits, to the non-executive directors. The structure of their remuneration should have (i) a fixed component (ii) a variable component and (iii) additional variable payment for the chairman/ members of the audit committee or other committees of the Board. The independent directors should be paid adequate sitting fees but no stock options/profit-based commission. The remuneration committee should comprise at least three members, a majority of whom should be non-executive directors with at least one being an independent director.
- The companies should ensure that (i) directors are inducted through a suitable familiarisation process and (ii) there are systems/procedures/resources available to supply to the directors precise and concise information in a form and of a quality appropriate to effectively discharge their duties.

  The Board/its audit committee/executive management should effectively identify the risks impacting the company's business and document their procedure of risk and identification/minimisation/optimisation as a part of risk management policy/strategy. It should also (i) undertake a formal and rigorous annual evaluation of its own performance as well as of its committees and individual directors or (ii) conduct, at least annually, a review of the effectiveness of the system of internal records and (iii) ensure compliance of all the applicable laws.
- The audit committee of the Board should have at least three members, having knowledge of finance, audit and accounts, with a majority of the independent directors. It should have the power to, *inter-alia*, access information from the records of the company and obtain professional advise from external sources. Its responsibility should be to (i) monitor the integrity of the financial statements (ii) review the internal financial controls/internal audit function/risk management systems and (iii) review/monitor the external auditors independence/objectivity and the effectiveness of the audit process.
- The audit committee of the Board should be the first point of reference regarding the appointment of auditors. Its duty should be, *inter-alia*, to examine/review the documentation/certificate for proof of independence of the audit firm and recommend the appointment/reappointment/removal of the statutory auditors. Every auditor should submit a certificate to the effect that he has not undertaken any prohibited non-audit assignments for the company. A policy of rotation of auditors must be followed by the companies ranging between three years (for audit partners) and five years (for audit firm) with a similar cooling off period. The internal auditor should not be an employee of the company.
- Companies should get their secretarial audited conducted by a competent professional and the Board should comment on it in its report to the shareholders.
- Companies should ensure the institution of a mechanism for whistle blowing by employees and provide for adequate safeguards against victimisation of employees who avail of the mechanism.

CHAPTER 30

Learning Objectives

1. Describe the residual theory of dividends and Modigliani-Miller (MM) approach to the irrelevance of dividends and evaluate its validity
2. Explain and illustrate the two models—Walter's and Gordon's—according to which dividends are relevant and affect the value of the firm

Chapter Structure

Section 1 Irrelevance of Dividends
Section 2 Relevance of Dividends

Summary

- There are divergent views regarding the impact of dividend policy (dividend payout, D/P ratio) on the market price of the share and the value of the firm.
- According to one view represented by Walter, Gordon and others, the D/P ratio is relevant and it certainly affects the market price of shares.
- The key argument in support of the relevance of Walter's model is the relationship between the return on a firm's investment(r) and its cost of capital/required rate of return (k). If $r > k$, the firm should retain the earnings (or D/P ratio should be zero) as it is able to earn higher than what the shareholders could by investing on their own. In case $r < k$, it implies that shareholders can earn a higher return by investing elsewhere. Therefore, the entire earnings (D/P ratio should be 100 per cent) should be distributed to them. By following such a policy, the market price of share is maximised.
- According to Walter, the value of the firm, as measured by the market price per share (P) is given by the following equation:

$$P = \frac{D + \frac{r}{k}(E - D)}{k}$$

  The value of P is maximum when D is zero (in situations of $r > k$); when $r < k$, the value of $E = D$ gives maximum P.
- Gordon's proposition that dividend policy of the firm is relevant is based on two tenable assumptions: (i) investors are risk averse, and (ii) they put a positive premium on current incomes/dividends. The retained earnings are evaluated by the investors as a risky promise as the future dividend receipts are perceived by them as uncertain, both with respect to the amount as well as the timing.
- According to Gordon, the market value of a share is equal to the present value of future streams of dividend. Symbolically,

$$P = \frac{E(1 - b)}{k_e - b_r}$$

  The value of P increases with the increase in the D/P ratio, and is maximum when there are no retentions.
- The residual theory of dividends suggests that the dividends paid by a corporate should be viewed as a residual – the amount left over from corporate earnings after taxes after meeting the requirement

of all profitable investment projects, while maintaining a target debt-equity ratio. Cash dividends can be paid only if its available earnings are more than the required amount of funds to meet the desired debt-equity ratio.

- It results in fluctuating dividend payments, as earnings of a firm as well as profitable investment opportunities available to it are likely to vary from year to year.
- The dividend payment ratio may vary in the size range of zero to one-hundred depending on the size of earnings, capital expenditure requirements and the desired debt-equity ratio.
- Since stable dividend policy is desirable, a firm may smooth out actual dividend payments by creating a dividend equalisation fund.
- The other view, led by Modigliani and Miller (MM), takes a diametrically opposite position and contends that the dividend policy of a firm has no effect on its value.
- MM's proof in support of their argument is depicted in the following equation:

$$nP_0 = \frac{nD_1 + (n + \Delta n)\, p_1 - I + E - nD_1}{(1 + k_e)}$$

Since nd_1 in numerator of the equation cancels nd_1 and dividends (D) are not found, MM conclude that dividends do not count and the dividend policy has no effect on the share price.

- The arguments in support of MM do not stand the test of scrutiny under real world/business situations. Investors, in general, prefer current dividends to retained earnings. The major factors affecting the validity of MM model are: (i) tax effect, (ii) flotation cost, (iii) transaction and inconvenience costs, (iv) preference for current dividend and (v) resolution of uncertainty.
- The available empirical evidence seems to support the view that dividend policy is relevant. A firm should try to follow an optimum dividend policy which maximises the shareholder's wealth in the long run.

CHAPTER 31

Learning Objectives

1. Describe the general factors that affect dividend policy
2. Review and evaluate the three basic types of dividend policies—constant dividend per share, constant payout ratio and stable dividend plus extra dividend
3. Contrast the basic features of bonus shares and share splits
4. Explain share repurchase including the procedural aspects
5. Understand the legal, procedural and tax aspects of dividend policy
6. Summarise share split practices in India
7. Outline bonus share practices in India.

Chapter Structure

Section 1 Factors
Section 2 Bonus Shares (Stock Dividend) And Stock (Share) Splits Stock Repurchase (Buy-Back of Securities
Section 3 Legal, Procedural and Tax Aspects
Section 4 Share Splits in India
Section 5 Issue of Bonus Shares in India

Summary

- The determinants of the dividend policy of a firm are dividend payout (*D*/*P*) ratio, stability of dividends, legal, contractual and internal constraints and restrictions, owners' considerations, capital market considerations and inflation.
- The *D*/*P* ratio indicates the percentage share of the net earnings distributed to the shareholders as dividends. Given the objective of wealth maximisation, the *D*/*P* ratio should be such as can maximise the wealth of its owners in the 'long-run'. In practice, investors, in general, have a clear cut preference for dividends because of uncertainty and imperfect capital markets. Therefore, a low *D*/*P* ratio may cause a decline in share prices, while a high ratio may lead to a rise in the market price of the shares.
- A stable dividend policy refers to the consistency or lack of variability in the stream of dividends, that is, a certain minimum amount of dividend is paid out regularly. Of the three forms of stability of dividend, namely, constant dividend per share, constant *D*/*P* ratio and constant dividend per share plus extra dividend, the first one is the most appropriate. The investors prefer a stable dividend policy for a number of reasons, such as, desire for current income their, informational contents, institutional requirement, and so on.
- There are many empirical studies, (e.g. Lintrer) to support the contention that companies pursue a stable dividend policy.
- According to John Lintrer's study, dividends are 'sticky' in the sense that they are slow to change and lag behind shifts in earnings by one or more periods. This leads to the pattern of stable dividend per share during the periods of fluctuating earnings per share and a rising step-function pattern of dividends per share during increasing earnings per share periods.
- A firm should seek a stable dividend policy which avoids occasional reductions in dividends. Investors

favourably react to the price of shares of such companies and there is a price enhancing effect of such a policy.

- The legal restrictions on payment of dividends stipulate conditions pertaining to capital impairment, net profits, insolvency and illegal accumulation of excess profits. The contractual restrictions on payment of dividends are imposed by loan agreements. The internal constraints impinging on the dividend restrictions relate to growth prospects, availability of funds, earnings stability and control. The dividend policy is also likely to be affected by the owners' consideration of (a) tax status of the shareholders, (b) their opportunities for investment and (c) dilution of ownership.
- While a firm which has easy access to the capital market can follow a liberal dividend policy, a firm having only limited access to the capital markets is likely to adopt low dividend payout ratio as they are likely to rely, to a greater extent, on retained earnings as a source of financing their investments.
- With rising prices, funds generated from depreciation may be inadequate to replace obsolete equipments. As a result, the *D*/*P* ratio tends to be low during periods of inflation.
- Apart from cash dividend, a firm can also reward its investors by paying bonus shares. The bonus shares/share splits do not have any economic impact on the firm in that its assets, earnings and investors' proportionate ownership remain unchanged. As a result, the number of shares outstanding increases. The increased number of shares outstanding tends to bring the market price of shares within more popular range and promote more active trading in shares. Moreover, bonus/split announcements have informational content to the investors. It will also enable the conservation of corporate cash and further enable a firm to raise additional funds particularly through the issue of convertible securities.
- With effect from financial year 2003-4, dividend income from domestic companies, mutual funds and UTI is exempt from tax in the hands of the shareholders/investors/unitholders. However, the domestic companies will be liable to pay dividend distribution tax.
- While the number of shares outstanding increases in the case of normal split, the reverse split decreases it. Like the normal split, there is no economic impact of the reverse split on (i) corporate earnings and (ii) shareholders' wealth.
- Share repurchase implies that a company buys its own shares. It is an alternative method to pay cash dividends. In India, the companies are allowed to buy back their shares. They are to conform to (i) the provisions of the Companies Act and (2) SEBI's buy-back regulations of listed companies.
- The major advantages of share repurchases are (1) Positive signaling effect, (2) Preferential tax treatment, (3) Price-enhancing effect on shares due to increased earnings per share, (4) Help in maintaining stable dividend policy, (5) Flexibility in dividend payment compared to the requirements of regular dividend policy, (6) Facilitates desired debt-equity ratio and (7) Useful for employee stock option plan. The only major drawback of the buyback is that it may sometimes cause discrimination between the shareholders who sell their shares and those who do not.

CHAPTER 32

Learning Objectives

1. Explain the basic valuation framework in terms of different concepts of value—book value, market value, intrinsic/economic value, liquidation value, replacement value, salvage value and fair value.
2. Describe the four major approaches to valuation of business—asset-based, earnings-based, market-value-based and fair value-based
3. Discuss market value added (MVA) and economic value added (EVA) approaches to measure value with focus on shareholders

Chapter Structure

Section 1 Conceptual Framework Of Valuation
Section 2 Approaches/Methods Of Valuation
Section 3 Other Approaches to Value Measurement

Summary

- The term 'valuation' implies the estimated worth of an asset or a security or a business. The alternative approaches to value a firm/an asset are: (i) book value, (ii) market value, (iii) intrinsic value, (iv) liquidation value, (v) replacement value, (vi) salvage value and (vii) fair value.
- While book value refers to the amount at which an asset is shown in the balance sheet of a firm, market value is the price at which an asset can be sold in the market. Intrinsic value is equal to the present value of incremental future cash inflows likely to accrue due to the acquisition of an asset, discounted at an appropriate discount rate. The fair value is the average of the book value, market value and intrinsic value.
- There are 4 approaches to valuation of business (with focus on equity share valuation): (i) assets based, (ii) earnings based, (iii) market value based and (iv) the fair value method.
- Assets-based method focuses on determining the value of net assets = (Total assets – Total external obligations).
- Net assets per share can be obtained dividing total net assets by the number of equity shares outstanding. It indicates the net assets backing per equity share (also known as net worth per share).
- Earnings based method relates the firm's value to its potential future earnings or cash flow generating capacity. Accordingly, there are two major variants of this approach (i) earnings measure on accounting basis and (ii) earnings measure on cash flow basis. As per the first method, the value of business = Future maintainable profits, excluding extraordinary items related to income and losses (x) Relevant capitalisation factor.
- The second method makes use of the discounted cash flow technique to value the business. According to the DCF approach, the value of business/firm is equal to the present value of expected future operating cash flows (CF) to the firm, discounted at a rate that reflects the riskiness of the cash flows (k_0), that is,

$$\text{Value of firm}_0 = \sum_{t=1}^{\infty} \frac{\text{CF to Firm}_t}{(1+k_0)^t}$$

- Another variant of cash flow approach is to discount estimated free cash flows to the firm (FCFF) instead of operating cash flows. The FCFFs are computed by deducting incremental investments in long-term assets as well as investment in working capital from operating cash flows. The value of firm is $= \sum_{t=1}^{\infty} \frac{\text{FCFF}_t}{(1+k_0)^t}$. The value of equity can be determined by subtracting the total external liabilities from the value of the firm.
- Alternatively, the value of equity can be determined directly by discounting the free cash flows available to equityholders (FCFE) after meeting interest, preference dividends and principal payments, the discount rate being k_e, that is,

$$V_E = \sum_{t=1}^{\infty} \frac{\text{FCFE to equity-holders}_t}{(1+k_e)^t}$$

- The value of the firm/business can be segregated into two sub-periods: (i) PV of cash flows during explicit forecast period and (ii) PV of cash flows after explicit forecast period.
- In the context of cyclical businesses, the explicit forecast period can correspond to one full business cycle; in other businesses, the period can match with the number of years during which they are likely to perform well. The firm is said to have attained a steady state at the end of explicit period. Subsequent to this period, the firm grows at a steady rate (normal or less than normal) which is likely to continue in future years.
- The value determined after the explicit forecast period ($T + 1$) is referred to as the continuing value. Its value can be determined as per the following equation:

$$\text{Continuing value} = \frac{\text{FCFF}_{T+1}}{k_0 - g}$$

- The market value (reflected in the stock market quotations) is the most widely used approach to determine the value of a business, in particular of large listed firms. The market value indicates the price the investors are willing to pay for the firm's earning potentials and the corresponding risk. This method is particularly useful in deciding swap ratios in the case of merger decisions.
- Fair value method is not an independent method of share valuation. The method uses the average/weighted average of two or more of the above methods. Therefore, such a method helps in smoothening out wide variations caused by different methods and indicates the 'balanced' figure of valuation.
- The market value added (MVA) approach measures the change in the value of the firm from the perspective of all the providers of funds (i.e., shareholders as well as debentureholders).

MVA = [Total market value of the firm's securities – (Equity shareholder funds + Preference share capital + Debentures)].

- The MVA from the point of view of equity shareholders is = (Market value of firm's equity – Equity funds).
- The EVA method measures economic value added (or destroyed) for equity-owners by the firm's operations in a given year. The underlying economic principle in this method is to determine whether the firm is earning a higher rate of return on the entire invested funds than the cost of such funds.

EVA = [Net operating profits after taxes – (Total invested funds × WACC)]

Thus, the EVA approach measures the true profit position of the firm.

- Though the MVA and EVA are two different approaches, the MVA of the firm can be conceived as the present value of all the EVA profits that the firm is expected to generate in the future years.

CHAPTER 33

Learning Objectives

1. Explain the meaning, types, economics and limitations of merger/amalgamation/acquistion/takeover
2. Describe and illustrate how to determine the firm's value, financing techniques in merger and the evaluation of merger as a capital budgeting decision
3. Understand the relevent tax provisions applicable to mergers and demergers
4. Describe the legal and procedural aspects of mergers/amalgmation
5. Examine the SEBI Substantial Acquisition of Shares and Takeover Code
6. Discuss and illustrate financial restructuring
7. Analyse demerger/divestiture
8. Outline the motives for corporate mergers in India.

Chapter Structure

Section 1 Conceptual Framework
Section 2 Financial Framework
Section 3 Tax Aspects of Amalgamation, Merger and Demergers
Section 4 Legal and Procedural Aspects of Mergers/Amalgamations And Acquisiton/Takeovers
Section 5 Other Forms of Corporate Restructuring

Summary

- The growth of a firm can be achieved 'internally' either by developing new products and/or expanding the capacity of existing products or 'externally' by acquisitions, mergers, amalgamations, absorption and so on.
- While a merger is a combination of two or more firms in which the resulting firm maintains the identity of one of the firms only, an amalgamation involves the combination of two or more firms to form a new firm. In the case of merger/absorption, the firm that has been acquired/absorbed is known as the target firm and the firm that acquires is known as the acquiring firm.
- There are three types of mergers: (i) horizontal, (ii) vertical and (iii) conglomerate. Horizontal merger takes place when two or more firms dealing in similar lines of activity/business combine together. Vertical merger involves combination of two or more firms engaged in the various stages of production or distribution in the same business activity. Conglomerate merger is a combination of firms engaged in different/unrelated business activities.
- The major economic advantages of a merger are: (i) economies of scale, (ii) synergy, (iii) fast growth, (iv) tax benefits and (v) diversification.
- Synergy takes place as the combined value of the merged firm is likely to be greater than the sum of individual business entities. The combined value = value of acquiring firm, V_A + value of target firm, V_t + value of synergy, ΔV_{AT}.
- In ascertaining the gains from the merger, costs associated with acquisition should be taken into account. Therefore, the net gain from the merger is equal to the difference between the value of synergy and costs: Net gain = ΔV_{AT} – costs.
- Set-off and carry forward of losses of an acquiring firm with the firm having profits reduce the taxable income of the newly merged firm and, hence, the reduction of tax liability. Thus, a merger can provide tax benefits.

- Merger suffers from certain weaknesses also, the major ones being: (i) the management of the two firms may not go along because of friction and (ii) the dissenting minority shareholders may cause problems.
- The financial framework of merger covers three inter-related aspects: (i) determining the firm's value, (ii) financing techniques in merger and (iii) analysis of the merger as a capital budgeting decision.
- The alternative approaches to value a firm are (i) book value, (ii) appraisal value, (iii) market value and (iv) earnings per share (EPS).
- The alternative methods of financing mergers/payment to the acquired company are:(i) ordinary share financing, (ii) debt and preference share financing, (iii) convertible securities, (iv) deferred payment plan and (v) tender offers.
- The extent of merger gains to be shared between the shareholders of the acquiring firm and the target firm depends on the exchange ratio. The ratio depends on the relative bargaining position of the two firms and the market reaction of the merger move. Normally, the exchange ratio is such in which the merger gains accrue to the shareholders of both firms.
- Merger as a capital budgeting decision involves the valuation of the target firm in terms of its potentials to generate incremental future free cash flows (FCFF) to the acquiring firm. These cash flows are then to be discounted at an appropriate rate that reflects the riskiness of the target firm's business. The cost of acquisition is deducted from the present value of FCFF. The merger proposal is financially viable in case the NPV is positive. The finance manager can use sensitivity analysis to have a range of NPV values within which the acquisition price may vary.
- Alternatively, the target firm can be valued according to the adjusted present value (APV) approach. The APV approach to value FCFF of target firm has two components: (i) the value of the target company if it were entirely equity financed discounting the FCFFs using the unlevered cost of equity and (ii) the value of impact of debt financing both in terms of tax shield and bankruptcy costs. The present value of tax shield is determined, discounting tax savings by pre-tax cost of debt. The incremental bankruptcy costs (due to debt financing) are subtracted. The proposal is financially viable in case the NPV is positive.
- Activities related to expansion or contraction of a firm's operations or changes in its assets or financial or ownership structure are referred to as corporate restructuring. Its major forms other than mergers/ amalgamation and takeovers/acquisitions are: (i) financial restructuring, (ii) divestitures/demergers and buyouts.
- Financial restructuring is carried out internally in the firm with the consent of its various stakeholders. It is suitable mode of restructuring for corporate firms that have accumulated sizable losses over a number of years but hold prospects for better financial performance in future. An appropriate financial restructuring scheme is formulated which enables the corporate to write-off past accumulated losses and fictitious assets and restart with a fresh balance sheet which shows its share capital as well as its assets at their real/true worth.
- Divestitures/demergers involves selling of some segments of a business only in the form of a plant, division, product line, subsidiary and so on as they are either incurring losses or yielding very low returns. This enables the firm to have a more lean and focused operation. Besides, by selling the unproductive assets and utilising cash proceeds in expanding/rejuvenating other leftover assets/ operating units, the firm is likely to augment the profits of the demerged firm/wealth for its shareholders. The concept of demerger is also known as reverse synergy in that the value of the parts is greater than that of the whole.
- Divesture can take the following forms: (i) outright sale of an operating unit, (ii) spin-off, that is, creation of a new separate firm and (iii) split-up which involves the breaking-up of the entire firm in a number of new created separate legal entities.
- The management buyouts (MBO) involves the sale of a existing firm to the management (from the same firm/from outside/hybrid form). The leveraged buyouts (LBO) takes place when debt forms a substantial part of total financing from outsiders. The LBO should be used by corporates which have a low degree of operating /business risk.

- The following are the major tax benefits available to the amalgamated/resulting company: (i) carry forward and set-off of business losses, unabsorbed depreciation, unabsorbed capital expenditure on scientific research and (ii) the expenditure on patents and copyrights, know how, family planning, preliminary expenses and so on not yet written off in the books of amalgamating/demerged company to be written off by the amalgamated/resulting company in the same number of balance instalments. Virtually all fiscal concessions/incentives/deductions available to the amalgamating/demerged company are also available to the amalgamated/resulting company.
- The tax concessions are also available to the amalgamating company. Several tax concessions are also available to the shareholders of the amalgamating as well as the demerged company.
- Although the economic considerations of mergers, amalgamations and acquisitions are similar, the legal procedures involved are different. While the mergers and amalgamations are governed by the Companies Act, the courts and law, the takeovers and acquisitions are regulated by the SEBI.
- The merger of corporates in India is governed by the provisions of the Company Act. According to the stipulations in vogue, the acquiring firm should prepare the scheme of amalgamation in consultation with its merchant bankers/financial consultants. Included in the scheme are features such as description of the amalgamating and the amalgamated companies, main terms, management, transfer date, effective date and so on. The merger scheme requires approval in terms of the requirements of Section 391-394 of the Companies Act from shareholders, creditors/financial institutions/bankers, RBI and high court(s). The procedure for approval of the court is contained in the Companies (Court) Rules, 1959.
- Takeovers imply acquisition of controlling interest in a company by another company. They can take three forms: (i) negotiated/friendly, (ii) open market/hostile and (iii) bail-out.
- In the case of hostile takeover, the target company can use the following strategies to defend itself: (i) Poison Pill, (ii) Poison Put, (iii) Greenmail, (iv) Pac-man defence, (v) White Knight and (vi) White Squire.
- The corporate takeovers in India are governed by the Companies Act, listing agreements and SEBI code. The provisions of the Companies Act relate to acquisition of shares, restriction on acquisition and transfer of shares and so on. The takeover of companies listed on stock exchange is regulated by Clause 40–A and 40–B of the listing agreement. While Clause 40–A deals with conditions for continued listing, Clause 40–B contains the requirements to be met when a takeover offer is made.
- The SEBI takeover code provides for the following: (i) disclosure of shareholding and control in listed companies, (ii) substantial acquisition of shares/voting rights/control over a limited company, (iii) bailout takeovers and (iv) investigation and action by SEBI.

CHAPTER 34

Learning Objectives

1. Present a broad view of the foreign exchange markets
2. Explain the various types of foreign exchange rates (spot, forward and cross), direct and indirect quotations and spread and arbitrage processes in foreign exchange dealings
3. Discuss the factors—inflation, interest, balance of payment, volume of international reverses and level of activity and employment—that account for variation in exchange rates

Chapter Structure

Section 1 Foreign Exchange Markets
Section 2 Foreign Exchange Dealings
Section 3 Determinants And Select Theories Of Exchange Rates

Summary

- Different countries have different currencies and the settlement of all business transactions within a country is required/preferred in the local currency. The foreign exchange (FE) market provides a forum where the currency of one country is traded for the currency of another country.
- The FE markets deal with a large volume of funds as well as a large number of currencies of various countries. The major FE markets are London, New York and Tokyo and the major currencies traded are the US dollar, British pound sterling, Euro, Japanese yen, and Swiss franc.
- Commercial banks and central banks of the countries are the major participants in the FE markets. Business firms normally buy and sell securities through authorised dealers, say, commercial banks or brokers.
- While the commercial banks and other participants in the FE markets operate on commercial principles, the operations of the central banks are primarily regulatory in nature.
- Different currencies have different values; they are traded at an exchange rate. An exchange rate is the price of one country's currency expressed in terms of the currency of another country.
- Foreign exchange rate/quotation can either be direct or indirect. It is said to be direct when it is expressed in a manner that reflects the exchange of a specified number of domestic currency (say, Rs 48) for one unit of foreign currency (say, US $). The FE quotation is indirect when it is quoted in a manner that reflects the exchange of a specified number of foreign currency (say, US $0.02083) for one unit of local currency (say 1 rupee). Direct quotations are known as European quotations and indirect quotations as American.
- There are two-way rates for the FE quotations, one for buying the foreign currency (bid price) and another for its selling (ask price). Since dealers expect profit in foreign exchange operations, the bid price is lower than the ask price.
- The FE quotations are always with respect to the dealer. By convention, the first rate is the buying rate and the second rate is the selling rate (say Rs 47.50 – Rs 48.00 for US $1). Quotations, in practice, are up to four decimal points.
- Spread is the difference between the bid price and the ask price. It is gross profit of a dealer, out of which it meets its business/establishment expenses.
- While spot exchange rates are applicable to the purchase and sale of foreign exchange on an immediate delivery basis (in practice delivery takes place two days later), the forward exchange rates

are applicable for the delivery of foreign exchange at a future date (say, after 1 month/3 months/6 months and so on).

- Forward rates can be at a premium or discount. In case the forward rates are higher than the spot rates, the forward rates are at premium. The forward rates are at a discount when they are lower than the spot rates.
- When a direct quote of the home currency or any other desired currency is not available in the FE market, it is computed with the help of exchange quotes of other pairs of currencies, and is known as cross rates. Thus, cross rates facilitate computation of exchange rates of those currencies for which direct quotes are not available.
- Arbitrage refers to an act of buying foreign currency in one FE market at lower price and selling it in another at higher price. This difference in the exchange rates provides an opportunity to the arbitrageurs to earn profit without risk. As a result, equilibrium is restored in the exchange rates of currencies in different FE markets.
- Geographical arbitrage and triangular arbitrage are possible in spot markets. Geographical arbitrage consists of buying currency from a FE market where it is cheaper and selling it in another forex market where it is costly. Triangular/three-point arbitrage takes place when three currencies traded at three markets are involved.
- Covered interest arbitrage is feasible in forward markets. This is profitable when the difference between the forward rate and spot rate (in terms of premium or discount) is not matched by the interest rate differentials of the two currencies. In other words, when the difference in the forward and spot rates of the currencies involved coincides with their interest-rate differentials, arbitrage gain possibilities cease to exist.
- There are several factors that influence the determination of exchange rates of various currencies. The major factors are: (i) inflation rates, (ii) interest rates, (iii) balance of payment position, (iv) volume of international reserves and (v) level of activity and employment. Lower domestic inflation rate, higher interest rates, favourable balance of payment position, comfortable volume of international reserves (including gold) and the higher level of economic activity and full employment tend to appreciate exchange rates. In contrast, higher inflation rate, low interest rates, big/persistent deficit in the balance of payment, inadequate/low foreign exchange reserves and a low level of economic activity tend to depreciate exchange rates.

CHAPTER 35

Learning Objectives

1. Explain the three types of exposures in international business—transaction exposure, translation exposure and economic exposure
2. Review the four external techniques—forward contracts, currency options, swaps and money market operations—of foreign exchange risk management
3. Discuss the important internal hedging techniques to reduce foreign exchange risk exposure, namely, leading and lagging, invoice/billing in the desired currency, indexation clauses, sharing risk, shifting the manufacturing base, netting and reinvoicing centre
4. Enumerate risk management practices in India.

Chapter Structure

Section 1 Types of Exposure
Section 2 Foreign Exchange Risk Management—ExternalTechniques
Section 3 Ferm—Internal Techniques
Section 4 Risk Management Practices in India

Summary

- The multinational corporates (MNCs) and other business firms, having global business operations primarily encounter three types of exposure: (i) transaction exposure, (ii) translation exposure and (iii) economic exposure.
- Transaction exposure is inherent in all foreign currency denominated contractual obligations/transactions which require settlement in foreign currency. The notable items susceptible to translation exposure are debtors receivable in foreign currency, creditors payable in foreign currency, foreign loans and foreign investments. The profit (or loss) accruing to the business firm on these transactions is known at the time of their settlement.
- Translation exposure results from the need to translate foreign currency assets or liabilities into the local currency at the time of finalising accounts. Translation profits (or losses) may either be reflected in the income statement or be shown in the balance sheet (under the head of 'translation adjustment' as a separate item or adjusted in the owners' equity account).
- Economic exposure is defined as the change in the value of a firm due to unanticipated change in exchange rates. While favourable change in exchange rates enhances the value of a firm, unfavourable change may entail its erosion.
- Shapiro classifies economic exposure into two components, namely, transaction exposure and operating exposure. Operating exposure has an impact on the firm's future operating revenues, future operating costs and future operating cash flows.
- The greater is the susceptibility of operating cash flows to exchange rate changes, the greater is the economic exposure of the business firm, or *vice versa.* The firm's ability to adjust its cost structure and raise the prices of its products and services (depending on supply and demand elasticities) is the major determinant of its operating risk exposure.
- Foreign exchange risk is defined as the possibility of loss to the business firm on account of unfavourable movement in foreign exchange rates.

- Foreign exchange risk management (FERM) is concerned with techniques (both external and internal) through which finance managers/firms try to eliminate/reduce the adverse impact of unfavourable changes in the foreign exchange rates.
- The major external techniques of the FERM are: (i) forward contracts, (ii) currency futures, (iii) currency options, (iv) swaps and (v) money market operations.
- Forward contracts are contracts between business firms and authorised dealers of the FE markets in which the firms undertake to buy or sell foreign currency in exchange for home currency, at a specific future date at a pre-agreed exchange rate. A typical forward contract contains the (i) contract amount, (ii) forward exchange rate, (iii) parties of the contract, (iv) specific date of delivery, (v) name of foreign currencies involved and (vi) terms and conditions for cancellation.
- A currency future/futures contract is a standardised agreement to buy or sell a pre-specified amount of foreign currency at some specified future date between the parties of the contract. Currency future contracts are normally in the hard currencies (say British £, US $, Japanese yen) of the world and are traded on an organised exchange.
- Although future contracts are similar to the forward contracts in their objective of hedging foreign exchange risk, they differ in many significant ways. These are: (i) nature and size of contracts, (ii) mode of trading, (iii) liquidity, (iv) deposits/margins, (v) default risk and (vi) actual delivery.
- Currency option is a financial instrument that provides its holder a right but no obligation to buy or sell a pre-specified amount of a foreign currency at a pre-determined rate in the future (on a fixed maturity date/upto a certain period). Options are of two types: (i) call option and (ii) put option.
- In a call option the holder has the right to buy (but is under no obligation to buy) a specific currency at a specific price on a specific maturity date or within a specified period of time. In contrast, a put option confers the right but no obligation to sell a specified amount of a specific currency at a pre-fixed price on or upto a specified date.
- Swaps are exchange of debt obligations (interest and/or principal payments) between two parties. These are of two types, namely, interest swaps and currency swaps. While interest swaps involve exchange of interest obligations between two parties, currency swaps involve two parties who agree to pay each other's debt obligations denominated in different currencies.
- Money market operations involve borrowing home currency by the business firm which will enable it to buy required foreign currency from the spot market. Once purchased, it is to be invested in the forex money markets in the desired foreign currency. The amount of home currency borrowed should be of the magnitude which will enable the firm to accumulate (after investment) such an amount of foreign currency which will enable it to make full payment on the date of maturity.
- The important internal hedging techniques of FERM are: (i) leading and lagging, (ii) invoicing/billing in the desired currency, (iii) indexation clauses, (iv) sharing risk, (v) shifting the manufacturing base, (vi) netting and (vii) reinvoicing center.
- 'Leading' is taking the lead to collect debtors receivable in foreign currency before they are due (when the home currency is expected to strengthen) and to initiate lead to pay 'foreign' creditors before they are due for payment (when depreciation/devaluation of the home currency is apprehended). The strategy leads to higher home currency receipts and lower home currency payments. In contrast, lagging is delaying receipts from foreign currency designated receivables whose currencies are likely to appreciate and delaying payments of 'foreign' creditors whose currencies are likely to weaken.
- Instead of making two-way flows of money—one of receiving and another of paying, netting implies settlement on net basis. Netting is of two types: (i) bilateral and (ii) multilateral. While netting between two parties is referred to as bilateral, netting with more than two parties is called multilateral.
- Reinvoicing center (normally a subsidiary of the parent company) is a centralised collection and payment center of foreign currencies for all of its subsidiaries and affiliate companies. It is located in such a country where the foreign exchange regulations primarily in terms of convertibility and repatriation are the least constraining. The Centre not only helps in red-ucing the volume of foreign currency transfers but also hedging costs.

CHAPTER 36

Learning Objectives

1. Explain multinational capital budgeting decisions—nature, difficulties and importance, data requirement, accounting for intangible benefits, cash flows at parent and subsidiary levels and expropriation and other political risks
2. Discuss the computation of cost of capital for foreign investment projects
3. Outline the adjusted present value approach to evaluation of foreign investment proposals
4. Analyse the main components of multinational working capital management
5. Examine the features of external commercial borrowings (ECBs) as s source of international finance in India
6. Discuss another important source of international finance—Euro-issues and foreign currency exchangeable bonds

Chapter Structure

Section 1 Multinational Capital Budgeting Decisions
Section 2 Cost Of Capital
Section 3 Adjusted Present Value Approach
Section 4 Multinational Working Capital Management
Section 5 External Commercial Borrowings (ECBs)
Section 6 Euro Issues
Section 7 Foreign Currency Exchangeable Bonds

Summary

- International financial management is concerned with decisions related to multinational capital budgeting, cost of capital, working capital and sources of international finance.
- Comparative cost advantage, financial diversification and tax/fiscal incentives are the major motivating factors for undertaking investment abroad by MNCs.
- Foreign capital budgeting decisions are to deal with a number of complex issues/problems such as exchange rate risks, expropriation risk, blocked funds, foreign tax regulations and political risk. Therefore, they are relatively more difficult decisions to evaluate vis-à-vis domestic investment decisions.
- Relevant data consisting of incremental cash outflows required to execute a foreign investment proposal and projected incremental cash inflows after taxes (CFAT) expected from the proposed foreign capital budgeting decision during its economic useful life are the major inputs for its evaluation.
- Since total CFAT tends to overstate profitability of the foreign investment proposal, it is important to draw distinction between the total CFAT such an investment proposal generates and the incremental CFAT, the firm eventually has. The difference between the two sets of CFAT may arise due to: (i) cannibalisation, (ii) sales accretion, (iii) opportunity cost, (iv) treatment of fixed overheads and (v) fees and royalties.
- Cannibalisation implies the lost sales of the firm's existing product(s) on account of proposed foreign investment. Accordingly, the adverse effect of cannibalisation in terms of lost profit due to lost sales is to be deducted from total CFAT to arrive at incremental CFAT. In contrast, the positive impact of

increased profits due to sales accretion of the existing products of the parent company should be reckoned in determining incremental CFAT.

- While the allocation of the existing overheads and fees and royalties charged from the subsidiary by the parent merit exclusion, opportunity cost of existing resources used in undertaking a new investment proposal should be considered.
- In foreign capital budgeting decisions, there may be a substantial difference between the CFAT of the foreign investment project at the subsidiary level *vis-à-vis* that of the parent firm. The major factors causing the difference are: (i) double taxation of foreign income accruing to the parent company without giving any credit for corporate taxes as well as withholding taxes paid by the subsidiary company in the host country, (ii) exchange controls affecting repatriation of funds, (iii) inflation and interest rate differentials between the host country and the parent country affecting exchange rates, and so on. Being so, it is suggested that cash flows should be determined at the level of parent corporate firm as well as at subsidiary level separately.
- Political risk also has a profound influence on the overall risk of a foreign investment proposal. Political risk can range from mild interference to complete confiscation of all assets/or outright expropriation. In view of gravity of political risk, MNCs prefer investment in countries with stable governments, having stable economic policies and the least political risk of expropriation.
- Cost of capital (another major input) for foreign investment proposals (like domestic capital budgeting proposals) should be based on the weighted average cost of long-term sources of finance, namely, equity share capital, preference share capital, debentures, long-term loan/ debt and retained earnings. The weighted average (instead of simple average) is desired as the relative proportions of various sources of finance are different.
- While retained earnings have implicit costs, other sources of long-term finance have explicit costs.
- The explicit cost of any source of capital is the discount rate that equates the present value of the incremental cash inflows with the present value of its incremental cash outflows. In terms of equation:

$$CI_0 = \sum_{t=1}^{n} \frac{CO_t}{(1+k)^t}$$

- In the context of international finance, cash flows are to be adjusted for foreign exchange risk, flotation costs, corporate taxes, tax laws (regarding treatment of exchange losses and gains, withholding, repatriation of funds and amortisation of flotation costs), transfer costs involved in repatriation of funds, and so on.
- Cost of capital applicable to investment proposals of foreign subsidiaries should be based both on the origin of funds and risk involved in such proposals.
- Retained earnings represent undistributed profits of the corporate firm belonging to equity shareholders. Being so, the cost of retained earnings is equivalent to the opportunity cost of investing these funds in a similar risk-class of companies by the shareholders themselves. However, in effect, it is lower than the cost of equity as is evident from the following equation:

  $K_r = k_e (1 - Wt) (1 - f)$
- The dividend approach and the capital asset pricing model (CAPM) approach are used to compute cost of equity (k_e). According to the dividend approach, k_e is defined as the discount rate that equates the present value of all expected dividends per share with the net proceeds of the sale/market price of share. In equation terms:

$$P_0 (1 - f) = \sum_{t=1}^{n} \frac{D_1 (1+g)^{t-1}}{(1+k_e)^t}$$

- According to CAPM approach, the k_e is a function of (i) riskless rate of return (R_f), (ii) market rate of return (R_m) and (iii) beta. Symbolically,

  $$K_e = R_f + b(R_m - R_f)$$

  Where b = Covariance (R_m, R_f)/Variance R_m
- Weighted average cost of capital (WACC/k_0), in equation terms is:

  $$K_0 = k_e W_e + k_p W_p + k_d W_d + k_r W_r$$

  While market value weights (W) are theoretically superior to book value weights, book value weights are operationally convenient and more often used in practice.
- Applying a single rate of discount (k_0) to evaluate capital budgeting proposals is not appropriate in case the risks are different for various foreign investment proposals. Adjusted present value (APV) approach is an alternative approach to the WACC.
- According to the APV approach cash flows (CFAT) are to be discounted at an all equity rate (k_e*) that reflects only the business work so as to exclude the impact of debt financing. To this present value (PV) are added (i) the PV of interest tax shield (TS) and (ii) the PV of subsidies/concessions on interest costs (S_t) associated with project-specific financing. In terms of equation:

$$APV = \left[\sum_{t=1}^{n} \frac{CFAT_t}{(1 + k_e^*)^t} + \sum_{t=1}^{n} \frac{TS_t}{(1 + k_i)^t} + \sum_{t=1}^{n} \frac{S_t}{(1 + k_i)^t} \right] - CO_0$$

- The basic objectives of cash management of the MNCs (like domestic firm) is to meet the cash disbursement needs of the firm and to minimise funds committed to cash balances. For the purpose, the MNCs, *inter-alia,* should instruct foreign subsidiaries to remit cash as fast as possible when it is not needed to those places where it is needed (by using the netting system and currency center concept).
- MNCs should hedge its undesirable cash and marketable securities against foreign exchange rate risks. Forward contracts are by far the most commonly used hedging technique; others are borrowing or lending in different currencies, future contracts and options.
- In the context of credit management, the MNCs should ensure that (i) the risk/cost of default is lower than the incremental profits expected from granting credit, (ii) the risk from exchange rate fluctuations is hedged in particular for export credit sales to developing countries and (iii) the FERM technique ('leads and lags' indexation clause and others) are used as per the need.
- As far as inventory management is concerned, the MNCs (having subsidiaries all around the world) should maintain both working stocks and safety stocks at each user location as well as at the strategic storage centers. To ensure minimum payment of property taxes on assets (including inventories), it should hold safety stocks in different countries/locations at different times during the year.
- The Government of India permits Indian corporates to raise finance through external commercial borrowings (ECBs) only from internationally recognised sources. The ECBs include commercial bank loans, suppliers' credit securitised instruments such as floating rate notes (FRNs) and fixed rate bonds (FRBs) from non-resident lenders. The ECBs can be used for (i) investment, (ii) overseas client investment, (iii) first stage acquisition of shares in PSU disinvestments and (iv) lending to self-help groups/micro-finance. The RBI's operational guidelines relate to automatic route and approval route.
- Besides ECBs, Indian corporates are permitted to float their securities (known as euro issues) in the euro markets. There are two long-term euro issues: (i) Foreign Currency Bonds (FCCBs) and (ii) Global Depository Receipts (GDRs)/American Depositary Receipts (ADRs).
- A FCCB means a bond subscribed by a non-resident in foreign currency and convertible into ordinary shares of the issuing company in India, wholly or in part, on the basis of any equity related warrants attached to the debt instruments.

- A GDR/ADR means any instrument in the form of a depository receipt/certificate, created by the Overseas Depository Bank outside India and issued to non-resident investors against the issue of ordinary shares or FCCBs of the issuing company.
- Issue of FCCBs and ordinary shares through the GDR/ADR mechanism by Indian companies are to conform guidelines issued by the Government/RBI in this regard. Among others, the guidelines relate to (i) issue structure (i.e., the number of GDRs/ADRs to be issued, the issue price, the interest rate payable on FCCBs, conversion price, coupon rate, and so on), (ii) lis-ting, (iii) transfer and redemption, (iv) taxation.
- An Indian company can issue FCEB expressed in foreign currency the principal and interest in respect of which is payable in foreign currency and subscribed by a person who is resident outside India in foreign currency and exchangeable into equity shares of another company (i.e. offered company) in any manner, either wholly/partly or on the basis of any equity related warrants attached to a debt instrument.
- The proceeds of the FCEB may be invested by the issuing company in the promoter group companies which would use the proceeds in accordance with the end-users prescribed under the ECBs policy. They may also be invested overseas by way of direct investment including in JVs/WOS.
- The interest and the issue expenses should be within the all-in-cost ceiling specified by the RBI under the ECBs policy.
- The exchange price of the offered listed equity shares should not be less than the higher of the average of the weekly high and low of the closing prices quoted on the stock exchange during (i) six months, (ii) two weeks preceding the relevant date. The minimum maturity of the FCEB should be five years for redemption purposes.
- Interest payments on the FCEBs until the exchange option is exercised would be subject to deduction of tax at source. Tax on dividends on the exchanged portion of the FCEB would be in accordance with Section 115-AC(1) of the income-tax Act. The exchange of the FCEB into shares would not give rise to any capital gains tax.