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Fundamentals of Financial Management

SEMESTER 4

BUSINESS ADMINISTRATION

BLOCK - 1

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SEMESTER 4
BACHELOR IN BUSINESS ADMINISTRATION
FUNDAMENTALS OF FINANCIAL MANAGEMENT
BLOCK 1

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COURSE INTRODUCTION

In corporate World, finance plays an important role. This course will help you in understanding the basic concepts of corporate finance, role of finance manager, as well as the goals of financial management. In this course you will came to know about the objectives, steps in preparing a financial plan, forecasting. The companies raise the required funds by various means like issue of shares, debentures etc. and in certain cases they use their reserves. At the same time they prepare various financial statements like, Profit and Loss Accout, Balance Sheet, Cash Flow etc. This course will focus on two important aspects of financial management i.e. preparation and analysis of financial statements. The topics like capital structure, cost of capital financial leverage, capital budgeting, working capital management, receivable management etc. have also been included in this course which will help you in understanding the importance of financial management in business. This course consists of 15 units and the course is devided two blocks.

Block 1 deals with Introduction to Financial Management,Sources of Business Finance, Financial Planning,Capitalisation, Capital Structure, Cost of Capital,Leverage and Capital Budgeting Decision

Block 2 deals with working capital management, dividend decisions, financial statements, cash flow and funds flow, ratio analysis, receivables management, inventory management and lease and hire purchase.

Each unit of these blocks includes some along-side boxes to help you know some of the difficult, unseen terms. Some “EXERCISES” have been included to help you apply your own thoughts. You may find some boxes marked with: “LET US KNOW”. These boxes will provide you with some additional interesting and relevant information. Again, you will get “CHECK YOUR PROGRESS” questions. These have been designed to self-check your progress of study. It will be helpful for you if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with “ANSWERS TO CHECK YOUR PROGRESS” given at the end of each unit. And, at the end of each section, you will get “CHECK YOUR PROGRESS” questions. These have been designed to self-check your progress of study. It will be better if you solve the problems put in these boxes immediately after you go through the sections of the units and then match your answers with “ANSWERS TO CHECK YOUR PROGRESS” given at the end of each unit.

BLOCK 1: INTRODUCTION

This is the first block of the course “Fundamentals of Financial Management”. After completing this block, which consists of eight units , you will be able to get a fair idea on the different essential concept in Financial Management

The block comprises the following eight units:

The first unit introduces us to the Meaning of Financial Management; Finance Function; Significance of Financial Management; Relationship of Financial Management with other Areas of Management; Objectives of Financial Management; Role of the Financial Manager

The second unit gives us a broad overview of the Meaning and Significance of Business Finance, Financial Requirements of Business, Sources of Business Finance, Methods of Raising Long-Term Fund, Methods of Raising Short-Term Fund and International Financial Instruments

The third unit gives us an idea on the Steps in Financial Planning; Financial Plan; Financial Policies; Some Aspects Of Short-term Financial Policy; Forecasting or Estimating Financial Requirements; Taxation and Financial Planning

The fourth unit gives us an idea on the concept of Meaning of Capitalisation, Capital and Capitalisation, Theories of Capitalisation, Fair Capitalisation, Over Capitalisation, Under Capitalisation, Over Capitalisation Vs Under Capitalisation and Water Capital

The fifth unit will help us in understanding the concept of Meaning and Importance of Capital Structure, Patterns of capital structure, Kinds of capital structure, Importance of Capital Structure Decision, elements of a well planned capital structure, Optimum Capital Structure, Features of an Optimal Capital Structure and Limitations in designing optimal capital structure,Determinants of Capital Structure and Theories of Capital Structure, Factors to be considered while determining capital structure Approaches to Determine Appropriate Capital Structure

The sixth unit gives us a broad overview of Concept of Cost of Capital, Significance of Cost of Capital, Classification of Cost of Capital, Determination of Specific Cost and Weighted Average Cost of Capital

The seventh is about types of Meaning of leverage, Financial Leverage, Operating Leverage, Degrees of Operating Leverage, Combined effect of Financial and Operating Leverage

The eight unit is about Meaning of Capital Budgeting, Importance of Capital Budgeting, Types of Investments Decisions,Investment Criteria and Capital Rationing

The structure of Block 1 is as follows :

UNIT 1 : Introduction to Financial Management

UNIT 2 : Sources of Business Finance

UNIT 3 : Financial Planning

UNIT 4 : Capitalisation

UNIT 5 : Capital Structure

UNIT 6 : Cost of Capital

UNIT 7 : Leverage

UNIT 8 : Capital Budgeting Decision

UNIT- 1: INTRODUCTION TO FINANCIAL MANAGEMENT

UNIT STRUCTURE

1.1 Learning Objectives

1.2 Introduction

1.3 Meaning of Finance

1.4 Meaning of Financial Management

1.5 Finance Function

1.6 Significance of Financial Management

1.7 Relationship of Financial Management with other Areas of Management

1.8 Objectives of Financial Management

1.9 Role of the Finance Manager

1.10 Let Us Sum Up

1.11 Further Reading

1.12 Answers To Check Your Progress

1.13 Model Questions

1.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

After going through this unit, you will be able to :

- define the financial activities of a business
- discuss the importance of the finance function in a business organization
- explain the relationship between finance and other areas of management
- analyse the objectives of financial management
- distinguish between profit maximization and shareholders' wealth maximization as objectives of financial management
- explain the role of the finance manager.

1.2 INTRODUCTION

Finance lies at the root of economic activity. In any business, money is required to support its various activities. Therefore, finance is an important function. This has led to a separate discipline viz., Financial Management which is of recent origin. This discipline draws heavily on economics for its theoretical concepts. So, in this unit we are going to discuss about financial management.

The subject is of immense interest to both academicians and practicing managers. The interest to practicing managers is quite obvious. Financial decisions are among the most crucial decisions in a business organization. Therefore, an understanding of the theory of financial management provides them with conceptual and analytical insights to make those decisions prudently.

1.3 MEANING OF FINANCE

Business is an economic activity and finance is a factor which is required for its continuance. Finance is an art and science of managing fund. It basically denotes two areas: financial services and financial management. The former concerned with the design and delivery of advice and financial products to individuals, businesses and government and the later denotes duties of financial managers in the business firm. According to Oxford Dictionary, the word 'finance' means 'management of money.'

According to Webster, finance connotes 'the science on the study of the management of funds.'

Thus, different scholars gave different views on the definition of finance from time to time. According to different Scholar's, it means raising of funds denoting cash and encompassing the policy decision, acquisition and utilization of funds.

1.4 MEANING OF FINANCIAL MANAGEMENT

Financial Management is that managerial activity which is concerned with the planning and controlling of the firm's financial resources.

In other words, its role is to see that the financial activities of a firm are carried out in the best possible manner. Basically, the finance function centres around issues involved in fund acquisition and its utilization.

The term Corporate Financial Management is often used to emphasize the financial management of companies. Thus, it consists of the decisions relating to investment, financing and dividend.

Almost all business activities, directly or indirectly, involve the acquisition and use of funds. For eg., recruitment of employees in production activities require payment of wages and salaries and other benefits, and hence involves finance. Similarly purchasing a new machine or replacing the old one affects the flow of funds. In the same manner, advertising and sales promotion activities affect the financial resources of a firm.

1.5 FINANCE FUNCTION

The finance function encompasses the activities of raising funds, investing them in assets and distributing returns earned from assets to shareholders. While doing these activities, a firm attempts to balance cash inflow and outflow. It is evident that the finance function involves the four decisions viz., financing decision, investment decision, dividend decision and liquidity decision. Thus the finance function includes:

- Investment decision
- Financing decision
- Dividend decision
- Liquidity decision

These activities do not necessarily occur in a sequence. We now elaborate on these four financing decisions.

1. **Investment Decision:** The investment decision, also known as capital budgeting, is concerned with the selection of an investment proposal/ proposals and the investment of funds in the selected proposal. A capital budgeting decision involves the decision of allocation of funds to long-term assets that would yield cash flows in the future. Two important aspects of investment decisions are:



Debt —

An obligation to repay the loan.



Equity —

The ownership interest of shareholders in a corporation.

(a) the evaluation of the prospective profitability of new investments, and (b) the measurement of a cut-off rate against that the prospective return of new investments could be compared. Future benefits of investments are difficult to measure and cannot be predicted with certainty. Risk in investment arises because of the uncertain returns. Investment proposals should, therefore, be evaluated in terms of both expected return and risk. Besides the decision to commit funds in new investment proposals, capital budgeting also involves replacement decision, that is decision of recommitting funds when an asset become less productive or non-profitable.

The computation of the risk-adjusted return and the required rate of return, selection of the project on these bases, forms the subject-matter of the investment decision.

Long-term investment decisions may be both internal and external. In the former, the finance manager has to determine which capital expenditure projects have to be undertaken, the amount of funds to be committed and the ways in which the funds are to be allocated among different investment outlets. In the latter case, the finance manager is concerned with the investment of funds outside the business for merger with, or acquisition of, another firm.

2. **Financing Decision:** Financing decision is the second important function to be performed by the financial manager. Broadly, he or she must decide when, from where and how to acquire funds to meet the firm's investment needs. The central issue before him or her is to determine the appropriate proportion of equity and debt. The mix of debt and equity is known as the firm's **capital structure.** The financial manager must strive to obtain the best financing mix or the **optimum capital structure** for his or her firm. The firm's capital structure is considered optimum when the market value of shares is maximized.

   The use of debt affects the return and risk of shareholders; it may increase the return on equity funds, but it always increases risk as well. The change in the shareholders' return caused by the change

in the profit is called the **financial leverage**. A proper balance will have to be struck between return and risk. When the shareholders' return is maximized with given risk, the market value per share will be maximized and the firm's capital structure would be considered optimum. Once the financial manager is able to determine the best combination of debt and equity, he or she must raise the appropriate amount through the best available sources. In practice, a firm considers many other factors such as control, flexibility, loan *covenants*, legal aspects etc. in deciding its capital structure.

3. **Dividend Decision:** Dividend decision is the third major financial decision. The financial manager must decide whether the firm should distribute all profits, or retain them, or distribute a portion and return the balance. The proportion of profits distributed as dividends is called the **dividend-payout ratio** and the retained portion of profits is known as the **retention ratio**. Like the debt policy, the dividend policy should be determined in terms of its impact on the shareholders' value. The optimum dividend policy is one that maximizes the market value of the firm's shares. Thus, if shareholders are not indifferent to the firm's dividend policy, the financial manager must determine the optimum dividend-payout ratio. Dividends are generally paid in cash. But a firm may issue bonus shares. Bonus shares are shares issued to the existing shareholders without any charge. The financial manager should consider the questions of dividend stability, bonus shares and cash dividends in practice.

4. **Liquidity Decision:** Investment in current assets affects the firm's profitability and liquidity. Current assets should be managed efficiently for safeguarding the firm against the risk of illiquidity. Lack of liquidity in extreme situations can lead to the firm's insolvency. A conflict exists between profitability and liquidity while managing current assets. If the firm does not invest sufficient funds in current assets, it may become illiquid and therefore, risky. But if the firm invests heavily in the current assets, then it would loose interest as idle

current assets would not earn anything. Thus, a proper trade-off must be achieved between profitability and liquidity. The profitability-liquidity trade-off requires that the financial manager should develop sound techniques of managing current assets and make sure that funds would be made available when needed.

1.6 SIGNIFICANCE OF FINANCIAL MANAGEMENT

Financial decisions directly concern the firm's decision to acquire or dispose off assets and require commitment of funds on a continuous basis. Almost all business activities, directly or indirectly involve the acquisition and utilization of funds. Because it has an impact on almost all activities of an organization, financial management occupies a significant place in the organization. The concepts of financial management are applicable to an organization irrespective of its size, nature of ownership and control.

1.7 RELATIONSHIP OF FINANCIAL MANAGEMENT WITH OTHER AREAS OF MANAGEMENT

There exists an inseparable relationship between finance on the one hand and production, marketing, and other functions on the other. For example, recruitment and promotion of employees is clearly a responsibility of the HR function; but it requires payment of wages and salaries, and thus, involves finance. Advertising and sales promotion activities fall under the purview of marketing. Since they require cash, they affect financial resources.

Although the finance function has a significant effect on other functions, yet it need not necessarily limit or constraint the general running of the business. Financial considerations are given more weightage over other functions when a company is resource-crunched. Marketing and other strategies will be devised in the light of the financial constraints. On the other hand, a fund rich company will be more flexible in devising its marketing and other activities. In fact, financial policies will be devised to

fit production and marketing decisions of a firm in practice. The following are the relationships between financial management and other areas of management.

1. **Financial Management and Marketing:** It deals with planning and controlling the entire marketing activities of a concern and comprises the formulation of marketing objectives, policies, programmes and strategies. The purpose behind marketing management is to enhance the sales volume, to develop new markets, and to reach new customers. However, the philosophy and approach to the pricing policy are critical elements in the company's marketing effort, image and sales level. Since the determination of approximate price of the company's product is very important both to the marketing and financial managers, there should be a joint decision. While the financial manager can supply the vital information regarding costs, changes in costs at different levels of production and the profit margin required to carry on the business, the marketing manager provides information as to how different prices will affect the demand for the firm's product in the market and the firm's competitive position. Thus, the role of financial manager for the formulation of the pricing policies of the firm cannot be undermined.
2. **Financial Manager and Personnel Management:** The personnel manager organizes the personnel department, which is generally assigned the operative functions of employment, compensation, training, etc. These functions are performed in consultation with the heads of other departments. However, all these require finances and thereby the decision relating to these aspects can be taken by the personnel department, only after consulting with the finance department.
3. **Financial Management & Production Management:** Production is the conversion of raw materials into finished products, which is also called manufacturing of goods. The production department will have to ensure that production is carried on in the best manner at the lowest cost. However, production is indirectly related to the key

day-to-day decisions by the financial manager. For instance, changes in the production process may necessitate capital expenditures, which the firm's financial manager should evaluate and then finance. Thus, management and production management are related.

4. **Financial Management & Cost Accounting:** Cost accounting is the steering wheel which keeps the organisation on a steady path of prosperity. Most large firms have a separate cost accounting department to monitor expenditures in their operational areas. It helps the management in carrying out its functions by providing cost information. The finance manager is concerned with the proper utilisation of funds and thereby he is rightly concerned with the operational costs of the firm. Moreover, as the financial manager of the firm will have to make suitable recommendations to keep the cost under control, the information supplies by cost accounting department is very pertinent to him.

5. **Financial Management & Financial Accounting:** Financial accounting is that part of accounting which is employed to communicate the financial information of a business unit. Thus, it aims in ascertaining the profitability and providing information about the financial position of the concern. However, financial accounting is distinct from financial management, although both play role complementary to each other. If financial accounting is concerned with the recording, classifying, summarising and interpreting business transactions, the financial management is concerned with the task of ensuring that funds are procured at optimum cost and involve minimum financial risk. The information supplied by financial accounting is used by the financial manager to take decisions so as to help the concern in accomplishing its goals.

   In other words where financial accounting end, financial management starts. A financial manager cannot take a rational decision untill and unless accounting informations are available.



CHECK YOUR PROGRESS

Q1. What do you mean by financial management?

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.....

.....

Q2. State the four decisions of finance function.

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1.8 OBJECTIVES OF FINANCIAL MANAGEMENT

The firm's investment and financing decision are unavoidable and continuous. In order to make them rational, the firm must have a goal. Two financial objectives predominate amongst many objectives. These are:

1. Profit maximization
2. Shareholders' Wealth Maximization (SWM)

Profit maximization refers to the rupee income while wealth maximization refers to the maximization of the market value of the firm's shares. Although profit maximization has been traditionally considered as the main objective of the firm, it has faced criticism. Wealth maximization is regarded as operationally and managerially the better objective.

1. Profit maximization: Profit maximization implies that either a firm produces maximum output for a given input or uses minimum input for a given level of output. Profit maximization causes the efficient allocation of resources in competitive market condition and profit is considered as the most important measure of firm performance. The underlying logic of profit maximization is efficiency. Let us elaborate the term efficiency.

In a market economy, prices are driven by competitive forces and

firms are expected to produce goods and services desired by society as efficiently as possible. Demand for goods and services leads price. Goods and services which are in great demand can command higher prices. This leads to higher profits for the firm. This in turn attracts other firms to produce such goods and services. Competition grows and intensifies leading to a match in demand and supply. Thus, an equilibrium price is reached. On the other hand, goods and services not in demand fetches low price which forces producers to stop producing such goods and services and go for goods and services in demand. This shows that the price system directs the managerial effort towards more profitable goods and services. Competitive forces direct price movement and guides the allocation of resources for various productive activities.

Objections to Profit Maximization: However, it is argued that the assumption of perfect competition may not be valid. Also it is argued that an objective developed in the early 19th century when the features of business structure were self-financing, private property and single entrepreneurship. The only aim of the single owner then was to enhance individual wealth, which could easily be satisfied by the profit maximization objective. But modern businesses are characterized by a separation of management and ownership. The stakeholders of a business organization are varied and include shareholders, lenders, customers, employees, government and society. The objectives of these different stakeholders differ and may conflict with each other. The manager of the firm has the challenging task of reconciling these conflicting objectives. Therefore, in such a business situation, profit maximization is regarded as unrealistic, difficult, inappropriate and socially irresponsible.

Another criticism is that such an objective tends to result in production of goods and services that are unnecessary from society's point of view. It might also lead to inequality of income and wealth. The price system and therefore, the profit maximization principle may not work due to imperfections in practice. Firms producing same goods and

services substantially differ in terms of technology, costs and capital. Therefore, it is difficult to have a truly competitive price system. Thus, it is strongly doubted that the sole objective of profit maximization can lead to social welfare. But it would be incorrect to do away with this objective. Rather, government intervention is required to minimize any market imperfections that exist and make the market truly competitive.

Further profit maximization fails to serve as an operational criterion for maximizing the owner's economic welfare because it is loosely defined, ignores the timing of returns and ignores risk. We elaborate on these three aspects in the following paragraphs.

Ambiguous Meaning: The precise meaning of the term profit is not clear and thus ambiguous. Does it mean short-term or long-term profit? Does it mean profit before tax or after tax? Does it mean total operating profit or profit accruing to shareholders?

Timing of Returns: The profit maximization objective does not consider the time value of money as it values the earnings of different periods as equal. This is because the money received today has more value than received after five years.

Uncertainty of Returns: Two firms may have same total expected earnings. But if the earnings of one firm fluctuate considerably as compared to the other, it will be more risky. Generally, owners of the firm would prefer smaller but sure profits to a potentially larger but less certain stream of benefits. This objective ignores the uncertainty that is associated with a stream of earnings.

An alternative to profit maximization, which overcomes the above drawback, is the objective of wealth maximization.

2. **Shareholders' Wealth Maximization:** Shareholders' wealth maximization means maximizing the net present value of a course of action to shareholders. Net Present Value (NPV) of a course of action is the difference between the present value of its benefits and the present value of its costs. A financial action that has a positive NPV creates wealth for shareholders and therefore, is desirable. A

financial action resulting in negative NPV destroys shareholders' wealth and is, therefore undesirable. Between mutually exclusive projects, the one with the highest NPV should be adopted. NPVs of a firm's projects are additive in nature. That is

$$NPV(A) + NPV(B) = NPV(A+B)$$

The objective of Shareholders Wealth Maximization (SWM) considers timing and risk of expected benefits. Benefits are measured in terms of **cash flows**. One should understand that in investment and financing decisions, it is the flow of cash that is important, not the accounting profits. SWM as an objective of financial management is appropriate and operationally feasible criterion to choose among the alternative financial actions.

Maximizing the shareholders' economic welfare is equivalent to maximizing the utility of their consumption over time. The wealth created by a company through its actions is reflected in the market value of the company's shares. Therefore, this principle implies that the fundamental objective of a firm is to maximize the market value of its shares. The market price, which represents the value of a company's shares, reflects shareholders' perception about the quality of the company's financial decisions. Thus, the market price serves as the company's performance indicator.

In such a case, the financial manager must know or atleast assume the factors that influence the market price of shares. Innumerable factors influence the price of a share and these factors change frequently. Moreover, the factors vary across companies. Thus, it is challenging for the manager to determine these factors.

It is, however, generally agreed that the value of an asset depends on its risk and return. Let us understand the relationship between risk and return.

Risk-return Trade-off: Risk is an element of financial decisions and different financial decisions carry different degree of risk. For instance, decision to invest money in government bonds has less risk as interest rate is known and the risk of non-payment is very

less. On the other hand, decisions to invest money in equity shares involve greater risk as return is not certain. However, the return from government bonds will be lower than return from shares in the long term. Risk and expected return move in the same direction; the higher the risk, the higher the expected return.

Financial decisions are guided by the risk-return trade-off. The relationship between return and risk can be expressed as:

Return = Risk-free rate + Risk-premium

Risk-free rate is a rate obtainable from a risk free government security like treasury bills, bonds etc. An investor who bears risk from his/her investment requires a risk premium above the risk-free rate. Risk-free rate is a compensation for time and risk premium for risk. Higher the risk of an action, higher will be the risk premium leading to higher required return on that action. A proper balance between risk and return should be maintained to maximize the market value of a firm's shares. Such balance is called risk-return trade-off and every financial decision involves this trade-off.

The financial manager should strive to maximize returns in relation to the given risk. To ensure maximum return, funds flowing in and out of the firm should be constantly monitored to ensure that they are properly utilized.

1.9 ROLE OF THE FINANCE MANAGER

A financial manager is a person who is responsible to carry out the finance functions. The financial manager is a key person in an organization and is part of the top management team. The finance manager is responsible for shaping the fortune of an organization. Therefore, he or she needs to have a broader and far-sighted outlook. He must ensure that the funds of an organization are utilized in the most efficient manner. Since the finance manager's actions have far-reaching consequences for the firm because they influence the size, profitability, growth, risk and survival of the firm, and thus, affect the overall value of the firm. The financial manager, therefore, must have a clear understanding and a strong grasp of the nature and scope of the finance function.

The finance manager performs several important functions in close consultation with the chief executive officer of the organisation. We discuss these functions as follows:

1. **Formulation of Objective:** Formulation of financial objectives is the fundamental function of the financial manager. These objectives should be in tune with the overall objectives of the organisation.
2. **Forecasting and Estimating Capital Requirements:** A financial manager has to estimate and forecast the financial requirements of a business. He should make estimates for both short-term and long-term requirements of funds. Unless proper thought is given to the financial requirements of the business, there will be either deficiency or surplus of funds. If a business concern has deficiency of capital, it cannot meet its commitments in time. On the other hand, if a business concern has excess capital, the management may become extravagant in spending. This will increase the cost of production and reduce the overall profit of the firm.
3. **Designing the Capital Structure:** It denotes the kinds and proportion of different securities. Thus the capital structure of a company is said to be the composition of equity and preference capital and debt capital. After estimating the financial requirements, the financial manager will have to design the kind and proportion of various sources of funds. This should be based on the analysis of cost of capital, consideration of factors such as risk, return and control conditions on money and capital market.
4. **Determining the Suitable Source of Finance:** The decision to tap various sources of finance depends upon the capital structure designed. On the basis of it, the finance manager has to determine the sources from which the funds are to be raised. The management can raise finance from various sources such as shares, debentures, financial institutions, commercial banks and so on. The financial manager should analyse the pros and cons of all these sources before making a fine decision.
5. **Procurement of Funds:** After estimating the capital requirements and deciding about the sources of finance, the financial manager has to take necessary steps to procure the funds.

6. **Investment of Funds:** The funds procured should be prudently invested in various projects. The technical capital budgeting may be helpful in selecting a project. While taking investment decisions, the financial manager has to keep in mind the principles of profitability, liquidity and safety. The principle of profitability should not be the only criterion of investment because, if the funds are blocked in unsafe projects, the solvency of the company will be in danger.
7. **Dispersal of Profits:** The financial manager has to decide how much is to be retained for internal use and how much is to be declared as dividend out of profits of the company. A large number of factors like the trend of earnings of the company, the trend of market price of its shares, the requirement of funds for self-financing, the future prospects, the cash flow position and so on, should influence these decisions. Thus, this is an important area of financial management.
8. **Maintaining the Proper Liquidity:** Every organisation is required to keep some liquidity for meeting its day-to-day needs. Availability of cash is necessary to maintain its liquidity. Cash is needed to pay off creditors, purchase stock of materials, pay labour and to meet day-to-day expenses. The finance manager has to decide the need for liquid assets and then arrange them in such a way that there is no scarcity of funds.
9. **Understanding Capital Markets:** Capital markets bring investors (lenders) and firms (borrowers) together. Hence, the financial manager has to deal with capital markets. He or she should fully understand the operations of capital markets. He or she should know how risk is measured and how to cope with it in investment and financing decisions. For example, if a firm uses excessive debt to finance its growth, investors may perceive it as risky. The value of firm's share may, therefore, decline. Similarly, investors may not like the decision of a highly profitable firm to distribute dividend. It is through their operations in capital markets that investors continuously evaluate actions of the financial manager.

10. Maintaining Relation with Outside Agencies: The financial manager should establish and maintain cordial business with outside agencies like financial institutions, stock exchanges, tax authorities and so on.



CHECK YOUR PROGRESS

Q3. Fill in the blanks with appropriate words:

a. Study of financial management provides insights to managers to take ..... decisions.

b. Fund …….. and ……. are common to almost all business activities.

c. Long-term asset mix decision is called the …….. decision.

d. ..... of a course of action is the difference between the present value of its benefits and the present value of its costs.

Q4. State True / False for the following statements:

a. The main objective of a firm is to maximize profits. (True/False)

b. Financial management and financial accounting are one and the same. (True/False)

c. The capital structure of a firm guides the decision to tap various sources of finance. (True/False)

d. The finance manager has to coordinate with other departments of a firm in order to carry his/ her functions. (True/False)

e. There is risk involved in financial decisions. (True/False)



1.10 LET US SUM UP

In this unit, we have discussed the following aspects :

- Financial Management is that managerial activity which is concerned with the planning and controlling of the firm's financial resources. The finance function centres on issues involved in fund acquisition and its

utilization. The main activities of the financial manager, therefore, are (1) anticipating financial needs, (2) acquiring financial resources, and (3) allocating funds to businesses.

- Finance function involves four decisions viz., financing decision, investment decision, dividend decision and liquidity decision.
- The financing decision is related to the financing mix or capital structure. The mix of debt and equity is known as the firm's **capital structure.** The firm's capital structure is considered optimum when the market value of shares is maximized.
- The investment decision, also known as capital budgeting, is concerned with the selection of an investment proposal/ proposals and the investment of funds in the selected proposal.
- The dividend decision is concerned with whether to distribute all profits, or retain them, or distribute a portion and return the balance. Dividend-payout ratio is the proportion of profits distributed as dividends and the retention ratio is the retained portion of profits.
- The profitability-liquidity trade-off requires that the financial manager should develop sound techniques of managing current fund and make sure that funds would be made available when needed.
- There exists an inseparable relationship between finance on the one hand and production, marketing, and other functions on the other.



1.11 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition



1.12 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: Financial Management is that managerial activity which is concerned with the planning and controlling of the firm's financial resources.

Ans to Q.2: Financing decision, investment decision, dividend decision and liquidity decision.

Ans to Q.3: a) Prudent b) Acquisition and Utilization
c) Investment decision d) Net Present value

Ans to Q.4: a) False b) False c) True d) True e) True

1.13 MODEL QUESTIONS

Q1. What is financial management? Explain the significance of financial management.

Q2. Discuss the relationship of financial management with other areas of management.

Q3. Discuss the various types of financial decisions.

Q4. What are the principal functions of the finance manager?

Q5. Distinguish between profit maximization and wealth maximization objectives of financial management.

Q6. Discuss the risk-return trade-off in financial decisions.

Q7. What is the major difference between financial management and financial accounting?The output devices help the computer to communicate with us by converting the electric signals to human understandable signals.

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UNIT 2: SOURCES OF BUSINESS FINANCE

UNIT STRUCTURE

2.1 Learning Objectives

2.2 Introduction

2.3 Meaning and Significance of Business Finance

2.4 Financial Requirements of Business

2.5 Sources of Business Finance

- 2.5.1 On the Basis of period
- 2.5.2 On the Basis of Ownership
- 2.5.3 On the Basis of Sources of Generation

2.6 Methods of Raising Long-Term Fund

- 2.6.1 Equity Shares
- 2.6.2 Preference Shares
- 2.6.3 Retained Earnings or Ploughing Back of Profit
- 2.6.4 Issue of Debentures
- 2.6.5 Term Loan

2.7 Methods of Raising Short-Term Fund

- 2.7.1 Loans from Commercial Banks
- 2.7.2 Public Deposit

2.8 Other Sources

2.9 International Financial Instruments

2.10 Let Us Sum Up

2.11 Further Reading

2.12 Answers to Check Your Progress

2.13 Model Questions

2.1 LEARNING OBJECTIVES

After going through this unit, you will able to-

- explain the meaning of business finance
- discuss the various sources of business finance
- explain various methods of raining short-term fund
- explain various methods of raining long-term fund
- discuss about some internatinal financial instruments.

2.2 INTRODUCTION

We all know that no business can survive without finance. Finance is a very important component of business. Smooth functioning of business requires sufficient amount of funds and its proper management. Determining financial requirements and raising of funds from appropriate sources is also an important task.In this unit we will discuss about business finance, its significance,sources of business finance and methods of raising fund.

2.3 MEANING AND SIGNIFICANCE OF BUSINESS FINANCE

Finance is the most essential factor for any business activity.In some way or other every sphere of a business is related to finance. Finance is life blood for all business activity. A business of any form and kind requires finance for its smooth operation. Finance is as important in business as blood in human body. As human body cannot function properly without adequate circulation of blood, in the same way a business cannot function properly without adequate supply of fund.In modern days,businesses are run on very large scale and use heavy sophisticated machinery which requires huge amount of investment. With the changing economic scenario, today, most of the businesses start running globally. Hence, the role of finance in modern day business increases manifold.

Definition of Business Finance

Finance is the major functional area for all businesses. It not only deals with collection of funds but also deals with its effective utilization for achieving the organizational goals.

According to B.O. Wheeler, “Finance is that business activity which is concerned with the acquisition and conservation of capital funds in meeting the financial needs and overall objectives of a business enterprise.”

According to Guthmann and Dougall, “Business finance can be broadly defined as the activity concerned with the planning, raising, controlling and administering the funds used in the business”

2.4 FINANCIAL REQUIREMENTS OF BUSINESS

A business enterprise requires capital for various purposes such as for acquiring fixed assets, current assets, intangible assets; for paying establishment expenses and for financing expansion and diversification of the business etc. The financial requirement of business can be broadly put in the following way:

i. **Fixed capital requirement:** Fixed capital is that portion of capital which is used in procuring fixed assets such as land and building, plant and machinery, furnitures etc. Fixed assets remain in the business for long period of time and used repeatedly. These are not meant for resale. Fixed assets are permanent need of a business. Besides financing fixed assets fixed capital also requires for renovation and replacement of worn out assets and for expansion and diversification of the business.Following are the factors which determine the fixed capital requirement of a company:
   a) Nature of business
   b) Size of business
   c) Production technique
   d) Degree of automation
   e) Mode of acquisition of fixed asset, etc.

ii. **Working capital requirement:** Working capital also called *circulating capital* or *revolving capital* is that portion of capital which is used for holding current assets such as stock, bills receivables and cash for meeting day-to-day expenditure on salary, wages, rent, commission, advertising etc. current assets are those assets which could be converted in to cash with in a period of twelve months. Working capital is very important for maintain regularity of the business. Working capital can be explained as gross working capital which includes funds invested in current asset and net working capital which includes funds invested in current assets minus current liabilities. Following are the factors which determine the fixed capital requirement of a company:
   a) Nature of business

b) Size of business

c) Length of production cycle

d) Seasonal variation

e) Working capital cycle, etc.



CHECK YOUR PROGRESS

Q 1: State the different financial requirements of a business.

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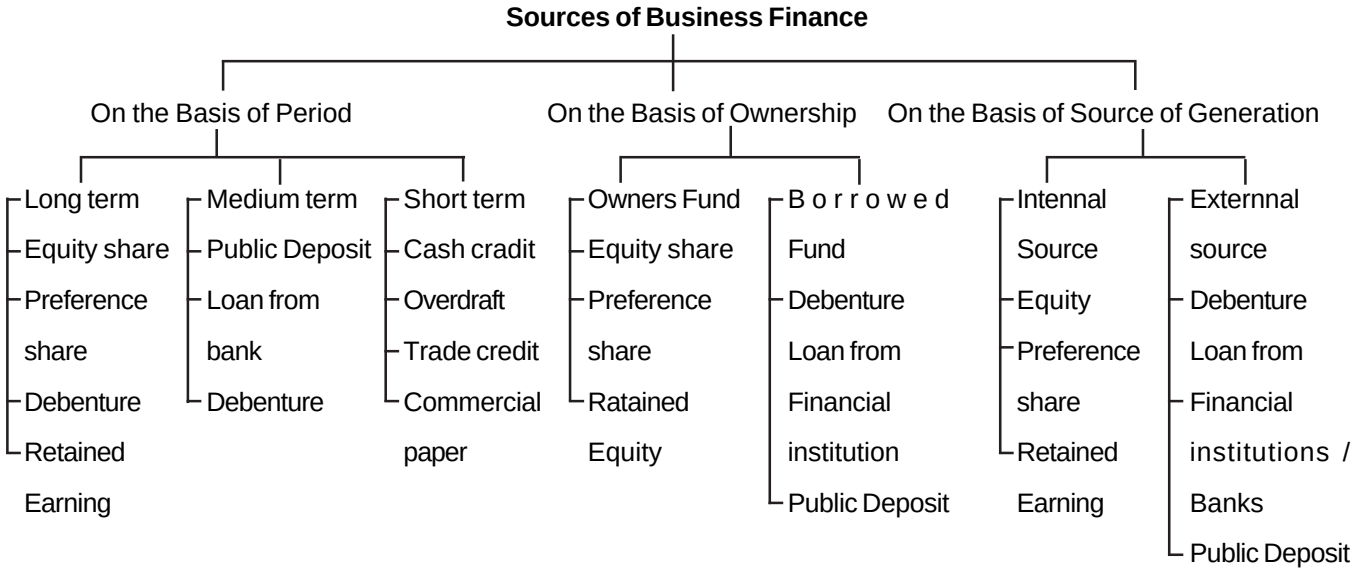
Q 2: What are the determinants of fixed capital?

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2.5 SOURCES OF BUSINESS FINANCE

In case of a sole proprietorship or partnership business, the required fund can be raised by the owner/owners from his personal sources or can borrow from friends, relatives and banks. But, in case of a joint stock company, various sources are available from which fund could be raised. The various sources from which a business can raised funds can be classified in the following way:



2.5.1 On the Basis of Period

On the basis of period for which fund is required, there are three sources through which funds can be raised. These are:

i. **Sources of long-term finance:** When a business firm raised funds for more than five years, it is called long-term fund. Long-term fund is required for acquiring fixed asset, expansion of business etc. Sources of long-term fund are equity shares, preference shares, debentures, loan from financial institution, retained earnings etc.

ii. **Sources of medium- term finance:** Funds raised for more than one but less than five years is called medium term fund. It is required for introduction of new product, up gradation of technology, investment in working capital, advertisement and sales promotion etc. Sources of short-term funds are debentures, public deposit, loan from banks, lease financing etc.

iii. **Sources of short- term finance:** Fund raised for a maximum period of twelve months is called short term fund. Short-term funds are required in a business for meeting day-to-day expenditures like payment of salaries, payment of trade creditors etc. Various sources of short term funds are cash credit, overdraft, discounting of bills, commercial papers, and customers' advances etc.

2.5.2 On the Basis of Ownership

On the basis of ownership sources of business finance can be classified in to owner's fund and borrowed fund.

i. **Sources of owner's fund:** As the name implies, it is the fund contributed by the owners i.e. shareholders and the profits reinvested in the business. This fund remains invested in the business for long period of time.Sources of ownership funds are equity shares, preference shares and retained earnings.

ii. **Sources of borrowed fund:** It is that part of capital which is borrowed from the outsiders. Borrowed funds are raised by the way of loans from public and credit from banks and other financial institutions. Various sources of borrowed fund are debentures, public deposit, banks and financial institutions etc.

2.5.3 On the Basis of Sources of Generation

Business finance may be generated from internal sources and external sources.

i. **Internal sources of fund:** Funds which are generated from within the business organization is called internal fund.Internal sources of funds are owner's fund, retained profit, sales of stock, sales of fixed assets, debt collection etc.

ii. **External sources of fund:** Funds which are raised from outside sources are called external fund. Debentures, term loans, public deposits etc. are the some examples of external sources of fund available for a business organization.

Beside these classifications of sources of funds, depending upon geographical location business funds may be classified as foreign fund and domestic fund. Fund collect from abroad by issuing international instruments are known as foreign fund and fund collected from the market of own country is known as domestic fund.



CHECK YOUR PROGRESS

Q 3: What are the sources of borrowed fund?

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Q 4: What are the internal sources of fund?

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2.6 METHODS OF RAISING LONG-TERM FUND

Issue of shares is the most important, popular and easy way of obtaining fixed or long-term capital. The share capital is company's own capital which is split into a large number of small equal parts, each such part being called a share. Those who purchase these shares are called 'shareholders'. They are the owners of the company. It is the permanent capital for the company, as the money raised in the form of shares remains in the company up to the date of winding up. It is the basis for designing capital structure of the company. According to the provisions of companies Act, 1956, a company can issue only the following two types of shares, (i) Equity Shares, (ii) Preference Shares.

2.6.1 Equity Shares

Equity share is the source of permanent capital for a company. These shares are those which do not impose any obligation on the company to pay fixed rate of dividend to their holders. Equity share gives voting right to its holders. Equity shareholders are the actual owners of a company who have control over the workings of the company. Dividend is paid on equity share on the recommendation of the Board of Directors. The rate of dividend paid to equity shareholders depends on profit of the company. More profit to the company means more dividend to equity shareholders and less profit to the company means less dividend to equity share holders. But, some company may pay dividend even if there is no profit to maintain dividend stability out of its reserves.

Features of equity shares

Equity shares have number of features which distinguish it from other securities. Following are some of its important features:

a) **Permanent capital:** Equity shares are the only source for permanent capital for a company. Equity share capital is redeemable only at the time of liquidation of a company.

b) **Right to income:** Equity shareholders have a claim to the residual income of a company. Residual income means the

income left over after paying expenses, interest charges, taxes, preference dividend etc. The residual income is known as income available to equity shareholders.

c) **Residual claim over assets:** In case of liquidation of a firm, the assets are used first to settle the claim of the outside creditors and preference shareholders, if anything left the equity shareholders got the right over such residue. In other words, in case of liquidation, equity shareholders are the last to be paid.

d) **Voting right:** Equity share holders are the actual owners of the company and they participate and vote in annual general meeting for appointing directors. Each equity share carries one vote. Thus, every shareholder can participate in the vital affair of election of directors and cast his vote depending on the number of shares held by him. Shareholders are entitled to vote in person or by proxy,

e) **Limited liability:** In a company limited by shares, an equity shareholder's liability is limited to the amount of investment in his respective share. If his shares are fully paid up, he doesn't have to contribute anything in the event of financial stress or winding up of his company. Whereas in case of a sole-trading concern or a partnership firm, the liability of owner/partners is unlimited which requires them to sell their personal assets and satisfy the claims of creditors in the event of insolvency.

Merits of issuing equity shares

Following are the some important merits of issuing equity shares:

a) Equity shares are stable and permanent source of capital for a company. Capital raised through equity share can be used throughout the life of a company since there is no imposition on a company to redeem equity shares.

b) Equity shares do not impose any kind of liability over the company to pay fixed rate of dividend to equity shareholders.

c) Assets of the company are not mortgaged for raising funds by issuing equity shares.

d) Equity capital increase creditworthiness of the company and increase confidence of the lenders.

e) Equity shareholders enjoy voting right and have say over the affairs of the company.

Demerits of issuing equity shares

Though raising capital by issuing equity shares has many merits, it has certain demerits also. Some of these are:

a) The cost of issuing equity share is not fixed and it is generally high compared to other sources of finance.

b) Equity share never ensure regular and stable income to investors.

c) Issues of additional equity share dilute the control and power of existing equity shareholders.

d) Investments in equity shares do not give tax advantage to the equity shareholders since, dividend are not tax exempted.

2.6.2 Preference shares

Sec. 85(1) of the Companies Act defines preference shares as those shares which carry preferential rights as the payment of dividend at a fixed rate and as to repayment of capital in case of winding up of the company. Thus, both the preferential rights viz. (a) preference in payment of dividend and (b) preference in repayment of capital in case of winding up of the company are attached to preference shares. The rate of dividend on these shares is fixed and the dividend on these shares must be paid before any dividend is paid to ordinary shareholders. Directors, however, may decide not to pay any dividend to any class of shareholders even if there are sufficient profits. If, they decide to pay the dividend, preference shareholders will get the priority over the ordinary shareholders.

Features of preference shares

Following are the features of preference shares:

a) **Claim over assets**: Though preference shareholder get prior claim on assets on the event of liquidation or winding up of the company, yet companies does not create any charge on assets while issuing preference shares.

b) **No voting rights:** Generally preference shareholders do not have voting rights, so they cannot control working of the company. Hence, promoter or management can retain the power of managing the company.

c) **Fixed return:** Preference shares are issued at a fixed rate of dividend. The rate of dividend paid to preference shareholder is lower than the rate of dividend paid to equity share holders. Hence, it helps the company in maximizing equity shareholders wealth.

d) **Flexibility:** Except redeemable preference shares all other preference shares are redeemable or convertible. After a fixed period of time preference share are redeemed or converted. It provides flexibility to the capital structure of the company, which is beneficial to the company.

e) **Claim on income:** Preference shareholders not only have prior claim on assets at the time of liquidation but also have prior claim on income or profit. Preference dividend is paid before paying any dividend on the equity share capital.

Merits of issuing preference shares

The company has the following advantages by issue of preference shares.

I. **Fixed return:** The dividend payable on preference shares is fixed that is usually lower than that payable on equity shares. Thus they help the company in maximizing the profits available for dividend to equity shareholders.

II. **No voting right:** Preference shareholders have no voting right on matters not directly affecting their right and hence, promoters or management can retain control over the affairs of the company.

III. **Flexibility in capital structure:** The Company can maintain flexibility in its capital structure by issuing redeemable preference shares as they can be redeemed under terms of issue.

IV. **No burden on finance:** Issue of preference shares does not impose a burden on the finance of the company because dividends are paid only if profits are available, otherwise no dividend is paid.

V. **No charge on assets:** No-payment of dividend on preference shares does not create a charge on the assets of the company as is in the case of debentures.

Demerits of issuing preference shares

Following are the demerits of issuing preference share:

I. **Higher rate of dividend:** A company is to pay higher dividend on these shares than the prevailing rate of interest on debentures of bonds. Thus, it usually increases the cost of capital for the company.

II. **Financial burden:** Most of the preference shares are issued cumulative which means that all the arrears of preference dividend must be paid before anything can be paid to equity shareholders. The company is under an obligation to pay dividend on such shares. It thus, reduces the profits for equity shareholders.

III. **Dilution of claim over assets:** The issue of preference shares involves dilution of equity shareholders claim over the assets of the company because preference shareholders have the preferential right on the assets of the company in case of winding up.

IV. **Adverse effect on credit-worthiness:** The credit worthiness of the company is seriously affected by the issue of preference shares. Preference capital has the preference right over payment of dividend, if the company avoids payment of dividend it adversely effect on creditworthiness.

V. No tax advantage: The taxable income is not reduced by the amount of preference dividend while in case of debentures or bonds, the interest paid to them is deductible in full.

2.6.3 Retained Earnings or Ploughing Back of Profit

'Ploughing back of profits' is an important source of internal source of finance for a company. It refers to the process of retaining a part of the company's net profits for the purpose of reinvesting in the business itself. In other words, the savings generated internally by a company in the form of 'retained earnings' are ploughed back into the company for diversification of its business.

Retained earnings are part of equity which is sacrifice by the equity shareholders. Retained earnings finally comes to the equity shareholders in the forms of enhance dividend or capital gain.

Retained earnings are the best and cheapest source of finance for business. For using retained earnings as capital a business does not have to depend on outsiders. It strengthens the position of a business. For using retained earnings or ploughing back of profit a company neither has to pay dividend nor need to repay the principal amount.

Merits of Retained Earnings

Retained earnings has following advantages as a source of finance:

a) Ready availability: A firm having sufficient retained earnings does not have to depend on outsiders for meeting financial requirement. Being an internal source, retained earnings are readily available for a firm.

b) Less expensive: Because of absence of flotation costs, brokerage costs, underwriting commission etc. retained earnings is less costly source of finance.

c) No dilution of control: Using retained earnings as a source of finance eliminates the fear of ownership dilution and loss of control by the existing shareholders.

d) No charge on assets: Internal source of finance never create any charge over the assets of the company.

Demerits of Retained Earnings

Following are the demerits of retained earnings:

a) **Limited availability:** The amount which can be raised by way of retained earnings is limited. The amount of retained earnings depends on profit of the company. Again, keeping in view the stability of dividend, the directors cannot retain the whole amount of profit.

b) **Dissatisfaction among investors:** Excessive retained earning means adoption of conservative dividend policy by a company. Adoption of conservative dividend policy may lead to dissatisfaction among the shareholders.

2.6.4 Issue of Debentures

Issue of debentures is another important source of obtaining fixed or long-term capital by a joint stock company. A debenture is an acknowledgement of a debt by a company usually issued under a common seal. Debentures are the uniform parts of a loan raised by the company. According to Thomas Evelyn, "A debenture is a document under the company's seal which provides for the payment of a principal sum and interest thereon at regular intervals, which is usually secured by a fixed or floating charge on the company's property or undertaking and which acknowledges loan to the company." A debenture-holder is a creditor of the company. A fixed rate of interest is paid on debentures. The interest on debentures is a charge on the profit and loss account of the company. Debenture holders are not the owners of the company.

Merits of Debentures

Following are the advantages of borrowing funds through debentures:

a) **Fixed rate of interest:** Debentures always carry a fixed rate of interest which is good for both company and the debenture holders. Debenture holders are assured of a fixed income and for the company also the amount of interest to be paid to debenture holders remain fixed. Unlike equity shareholders,

debenture holders cannot claim more interest in case there is more profit.

b) **No dilution of control:** Unlike equity shares, issue of debentures never dilute the controlling power of equity shareholders. Because, debenture holders do not have voting right in the management of the company.

c) **Tax benefit:** Interest paid on debentures is tax free hence it is one of the cheapest source of long- term capital for the company.

d) **Trading on equity:** Debentures enables the company to take advantage of trading on equity. It helps in maximizing return on equity and shareholders wealth maximization.

e) **Flexibility:** Use of debenture brings flexibility to the capital structure of the company as they can be redeemed after a certain period of time.

Demerits of Debentures

Issue of debentures suffers from following demerits:

a) **Permanent burden:** Since payment of interest to the debenture holders is fixed, it put real burden over the company. It became risky when profit of the company is low. Issue of debentures also brings legal obligation for paying interest.

b) **Weaken creditworthiness:** Excessive issue of debentures weakens creditworthiness of a company. It restricts the capacity of further borrowings.

c) **Charge over assets:** Issue of debentures creates charges over the asset. This again weakens the borrowing capacity of a company.

2.6.5 Term- Loan

Apart from above mention sources there is another source for long- term finance, that is, term- loan provided by various financial institutions. Term loans are of two types; short term loan and long term loan. Loan raised for a period ranging from one year to five years are called short term loan and loan raised for a period above

five years are called long term- loans. Term loans are long term debt for the company raised for long term investment like expansion, diversification, modernization etc.

In India during last forty years several financial institutions are established by the central and state governments for providing financial and technical assistance to the business and industrial houses. The main objective of these institutions is to provide medium term and long term capital to the industrial enterprises. Some of them are Industrial Finance Corporation (IFC), Industrial Development Bank of India (IDBI), Industrial Credit and Investment Corporation of India (ICICI), State Finance Corporations (SFCs) etc.

Advantages of term- loan

Following are the advantages of term-loan:

1. The cost of term loan is lower than the cost of equity or preference capital.

2. Term loans do not result in dilution of control.

3. Term loans are preferred since they are backed by security, which the lender prefers.

Disadvantages of term loan

Following are the disadvantages of term-loan:

1. Term loans do not carry voting rights.

2. Term loans generally do not represent negotiable securities.

3. Payment of interest and repayment of principal is obligatory. Failure to meet these obligations may threaten the existence of the firm.



CHECK YOUR PROGRESS

Q 5: State different sources of long term fund.

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Q 6: State the features of equity shares.

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2.7 METHODS OF RAISING SHORT-TERM FUND

The main sources of obtaining short-term capital are as follows:

2.7.1 Loans from Commercial Banks

Commercial banks are the most important and easy source of providing short-term capital to business enterprises. They constitute the major portion of working capital loans. They are given on the security of tangible and readily marketable securities. They provide a wide variety of loans tailored to meet the specific requirements of the business enterprise. The main forms in which commercial banks provide short-term finance to business enterprises are; (i) Loans (ii) Cash Credit (iii) Overdraft (iv) Discounting of Bills.

Advantages

Following are the advantages of procuring loan from commercial banks:

a) Procuring loan from commercial banks is easy and takes less time compared to other source of finance.

b) Since bank loan are taken for short period of time it does not create permanent liability.

c) Cost of raising loan from commercial banks is less, since there is no underwriting and other cost involve.

Disadvantages

Following are the disadvantages of procuring loan from commercial banks:

a) Commercial bank cannot provide funds for long period, funds from commercial bank are available only for short duration.

b) Generally bank charge a high rate of interest and interest payable on bank loan is a fixed burden.

c) Sometimes, bank demand for personal security from the directors of the company about the repayment of loan.

2.7.2 Public Deposit

In case of public deposit, general public are invited to deposit their savings with the company. Here, a company can obtain fund directly from the public. At the time of accepting deposit the company issue a receipt mentioning amount deposited, date of accepting deposit, rate of interest, date of payment etc. As compared to banks, Companies offers higher rate of interest on public deposit. On the other hand, for companies public deposit is cheaper than loan from commercial banks. In recent time, public deposit has become a popular means of finance.

Advantages of Public Deposit

As a source of fund public deposit has the following advantages:

a) **Low cost:** The rate of interest payable on public deposit by the company is lower than the interest on loans from banks and other financial institutions. On the other hand, administrative cost of public deposit is lower than the cost of issuing shares and debentures.

b) **No dilution of control:** Raising of capital through public deposit do not dilute control of owners, as depositors do not have voting rights.

c) **Flexibility:** Public deposit is a flexible source of finance. It can be issued or redeemed as per the financial requirement of the company.

d) **No charge over asset:** Accepting public deposit does not create any charge over the assets of the company. Assets of the company remain free and can be used for raising funds from banks and other financial institutions.

e) **Tax advantages:** Interest paid on deposits is a deductible expense for income tax purpose.

Disadvantages of Public Deposit

As a source of fund public deposit has the following disadvantages:

a) **Uncertainty:** Public deposits are fair weather friends'. It is an uncertain from of financing. When depositors feel that the

company is in an unstable position, they may not respond to fresh deposits or may start withdrawing their existing deposits.

b) **Short term source:** Generally, public deposit is available for short term financing. For long term financing a company cannot resort to public deposit.

c) **Not a sufficient source:** There are certain strict regulations on acceptance and renewal of public deposit. So, a company cannot raise unlimited amount from public deposit.

d) **No security:** In case of public deposit the depositors are not secured, since they have no charge over the assets of the company. They are unsecured creditor of the company.

e) **Difficult for New Companies:** Raising funds through public deposit is not a suitable way for the new companies, as they lack public confidence.

2.8 OTHER SOURCES

- **Indigenous bankers:** Indigenous bankers are private money lenders and other country bankers who provide short-term finance and charge high rates of interest. Now-a-days with the development of commercial banks and other financial institutions they have lost their earlier monopoly. These days, the business houses take the shelter of indigenous banks only in case of urgency.
- **Depreciation funds:** Depreciation fund is created out of profits of the company provide a good service of short-term capital, provided they are not invested in or represented by an asset.
- **Trade credit:** Trade credit refers to the credit extended by the supplier (seller) to the buyer. Under this arrangement, credit is not granted in cash. The goods are sold on credit. The usual duration of trade credit varies from 15 days to 90 days. It is granted to those customers who have sound financial standing, goodwill and reputation.
- **Government loan and assistance:** Now-a-days governments, both Central and the State provide business finance to industries in the form of loan for the development of

industries, preferably key industries, small-scale industries and cottage industries at concessional rates of interest. Further, financial assistance is also provided to industries of national importance in whose development the government is interested.

- **Customer's advances:** Now-a-days leading and reputed industries whose products are in good demand, such as, Tata Steel, Maruti Car, Philips (India) Ltd., Bajaj Auto, A.C.C., Hero Cycle etc. get advances from their customers and agents against orders received from them. It is also a cheap source of short-term finance.

2.9 INTERNATIONAL FINANCIAL INSTRUMENTS

After opening up of our economy during nineties companies are now allowed to raise funds from international sources. Following are some of the instruments issued by Indian companies for raising funds from international market.

- **Global Depository Receipt (GDR):** GDRs are negotiable equity instruments issued by a depository bank in international market. Each GDR represent a specific number of underling shares, say, 1 GDR= 10 Shares, of the issuing company, which are kept with a designated custodian bank. GDR can be redeemed at the price of the corresponding shares of the issuing company prevailing on the date of redemption. GDRs are denominated in dollars and cost of acquisition of shares through GDR is cheaper because they are issued at a discount on the market price.
- **American Depository Receipt:** The depository receipt issued by a company in USA is known as American Depository Receipt. ADRs are negotiable instruments denominated in US dollar representing a non US company's publicly traded, local currency equity shares. ADRs can be issued only in America and is traded at American stock exchanges such as New York Stock Exchange (NYSE), National Association of Securities Dealer Automated Association (NASDAQ). Issue of ADR gives access to the US institutional and retail market.

- **Foreign Currency Convertible Bonds(FCCBs):** Foreign Currency Convertible Bonds are issued to non-resident in foreign currency by Indian companies. FCCBs carry a fixed interest or coupon rate and are convertible in to ordinary/equity shares of the issuer company after a specific period of time. FCCBs are listed and traded abroad. It gives investor the flexibility to get the bond converted in to equity or get it redeemed at the end of specific period which is usually three years. Till conversion, the company has to pay interest in dollars and if the conversion option is not exercised , the redemption is also made in dollars.



2.10 LET US SUM UP

In this unit, we have discussed the following aspects:

- Broadly a business firm has two types of financial requirement-fixed capital requirement and working capital requirement.
- On the basis of period there are three sources of generating funds *viz*- short term, long term and medium term. On the basis of ownership, sources of fund are classified as- owners fund and borrowed fund. On the basis of sources of generation, sources of fund are classified as- internal and external sources.
- Equity shares, preference shares, retained earning etc. are the sources of ownership capital.
- Debentures, institutional loan, public deposit etc. are the sources of debt capital.
- Funds can be raised from international market through ADR, GDR, FCCBs etc.



2.11 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition

2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition

2.12 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: Broadly a business firm has two types of financial requirement- fixed capital requirement and working capital requirement

Ans to Q.2: Determinants of fixed capital are:Nature of business, Size of business, Production technique, Degree of automation, Mode of acquisition of fixed asset.

Ans to Q.3: Various sources of borrowed fund are debentures, public deposit, banks and financial institutions etc.

Ans to Q.4: Internal sources of funds are owner's fund, retained profit, sales of stock, sales of fixed assets, debt collection etc.

Ans to Q.5: Equity share, preference share, retained earnings, debentures etc. are the sources of long term fund.

Ans to Q.6: Main features of equity shares are- it is the permanent source of capital for the company, it gives voting right to the holders and has limited liability.



2.13 MODEL QUESTIONS

Q 1: Define business finance.

Q 2: What are the different sources of funds?

Q 3: What are the methods of raising long term fund?

Q 4: Discuss the various instruments used for raising foreign fund.

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UNIT 3: FINANCIAL PLANNING

UNIT STRUCTURE

3.1 Learning Objectives

3.2 Introduction

3.3 Meaning and Objectives of Financial Planning

3.4 Steps in Financial Planning

3.5 Financial Plan

- 3.5.1 Characteristics of a Good Financial plan
- 3.5.2 Ingredients of a Financial Plan

3.6 Financial Policies

3.7 Some Aspects of Short-term Financial Policy

3.8 Forecasting or Estimating Financial Requirements

- 3.8.1 Factors to be Considered For Estimating Financial Requirements

3.9 Taxation and Financial Planning

3.10 Let Us Sum Up

3.11 Further Reading

3.12 Answers To Check Your Progress

3.13 Model Questions

3.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- define financial planning
- describe the steps in financial planning
- explain the constitutents a good financial plan
- get acquainted with the ingredients of a financial plan
- explain the nature of financial policies
- explain the type of fund requirements of a business
- analyse the factors that need to be considered for estimating fund requirements
- explain how taxation effect financial planning of a firm

3.2 INTRODUCTION

In this unit we are going to discuss on the concept of financial planning. Financial planning plays an important role in an organisation. We will be discussing on objectives and steps of financial planning. The characteristics and ingredients of financial plan will also be discussed.

At the end of the unit we will get a fair idea on the financial policies, some aspects of short-term financial policy, forecasting or estimating financial requirements and taxation and financial planning.

3.3 MEANING AND OBJECTIVES OF FINANCIAL PLANNING

MEANING OF FINANCIAL PLANNING:

The process of managing a firm implies coordination and control of the efforts of the firm for achieving organizational objectives. The process of managing is facilitated when management charts shows its future course of action in advance and takes decisions in a professional manner, utilising the individual and group efforts in a coordinated and rational manner. One systematic approach for attaining effective management performance is financial planning.

Financial planning is the process of determining objectives, policies, procedures and programmes to deal with the financial activities **(discussed in unit I)** of an organization. We can say that financial planning is the process of analysing a firm's investment options (investment decision), estimating the funds requirement (liquidity decision) and deciding the sources of funds (financing decision). An organization irrespective of size requires some sort of financial planning. Planning helps management to make proper utilization of funds which would otherwise lead to waste. It enables a closer coordination between various functions of the organization and gives a direction to the organization to move forward in the future. In the absence of financial planning, an organization is susceptible to shortage of funds, improper utilisation of funds and inefficient financial management.

Thus, the basic elements of financial planning comprise (1) the investment opportunities the firm chooses to take advantage of, (2) the amount of debt the firm chooses to employ, and (3) the amount of cash the firm thinks is necessary and appropriate to pay shareholders. These are the financial policies that the firm must decide for its growth and profitability.

OBJECTIVES OF FINANCIAL PLANNING:

The objectives of financial planning can be pointed out as follows:

- To ensure adequate and regular capital flow from various sources for the smooth functioning of an organization
- To ensure liquidity throughout the year by achieving a balance between the inflow and outflow of funds
- To minimize the cost of financing through the judicious application of the financial resources.
- To facilitate financial control

3.4 STEPS IN FINANCIAL PLANNING

Financial planning involves the following four steps:

1. **Establishing Objectives:** The first step in financial planning is the formulation of financial objectives in tune with business objectives. Even though the extent to which capital is employed varies from firm to firm, the objective is similar in all firms. The financial planners should formulate both short and long-run objectives in order to be successful in the changing economic conditions. The use of capital in the correct proportion is the long-term objective of any firm.
2. **Estimating the Amount of Capital Required:** The basic aim of financial planning is the determination of capital requirements. Thus, the financial planners should estimate the amounts of both fixed and working capital required for various needs of the business.
3. **Determining the Capital Structure:** It refers to the proportion of different kinds of securities raised by a firm as long-term finance. Thus the financial planners should determine the types of securities to be issued and the relative proportion of each type of security.

4. **Formulating Financial Policies:** Financial policies are the guides to all actions. They deal with procuring, administering and distributing the funds of business firms. Financial policies of a business firm may be brought into the following broad categories:-
   (a) Policies governing the amount of capital required.
   (b) Policies which determine the control by the parties who furnish the capital.
   (c) Policies which act as a guide in the use of debt or equity capital.
   (d) Policies which guide management in the selection of sources of funds.
   (e) Policies relating to payment of dividends.
   (f) Policies which govern credit and collection activities.

3.5 FINANCIAL PLAN

A financial plan is a statement of what is to be done in future time. In an uncertain world, decisions need to be made far in advance of their implementation. Financial plans always entail alternative set of assumptions. These are:

- **A Worst case**: This plan would require making the worst possible assumptions about the company's products and the state of the economy.
- **A Normal case**: This plan would require making the most likely assumptions about the company and the economy.
- **A Best case**: This plan would require making the most optimistic assumptions.

Financial plans seek to accomplish the following:

- **Interactions**: The financial plan must make the linkages between investment proposals for the different operating activities of the firm and the financing choices available to the firm explicit.
- **Options**: The financial plan provides the opportunity for the firm to work through various investment and financing options. The firm addresses questions of what financing arrangements are optimal and evaluates options like closing plants or marketing new products.

- **Feasibility**: The different plans must fit into overall corporate objective of maximizing shareholder wealth.
- **Avoiding surprises**: Financial planning should identify what may happen in the future if certain events take place. Thus one of the purposes of financial planning is to avoid surprises.

3.5.1 Characteristics of a Good Financial Plan

A sound financial plan should possess the following characteristics-

1. **Simplicity:** A good financial plan should be free from complexity. In other words, a financial plan should be drafted in terms of the purpose for which the enterprise is organised.
2. **Flexibility:** A good financial plan of a firm should be in a position to finance expansion programmes without much difficulty. As the environment or organisational structure of a firm may change from time to time, it is desirable to have a more flexible and versatile plan than a routine stereotyped one.
3. **Intensive use**: A good financial plan should be such that it will provide for an optimum use of capital. Capital should not remain idle, nor there any *paucity* of capital. If this is not done, the profitability will suffer.
4. **Foresight**: A financial plan should be based on the vision and experience of the management. There should be systematic prediction of various contingencies. No business can assume that it will always have smooth sailing.
5. **Cost:** The cost of raising funds is an important consideration in the formulation of a financial plan. The selection of various sources should be such that the cost burden is minimum. An excessive burden of fixed changes on the earnings of the firm might inflate its cost of capital.
6. **Objectivity:** The figures and report to be used for a financial plan should be free from partiality, prejudice and personal bias. Thus a lapse from objectivity is not desirable.

7. **Liquidity**: A good financial plan should be based on the principle of liquidity which means the ability to produce cash on demand. This is made possible only when there is adequate net working capital. The degree of liquidity to be maintained depends on the size of the organisation, its age, its credit standing and nature of its business.
8. **Profitability:** A good financial plan should be based on the principle of profitability. It means the ability to enhance the profit-earning capacity of the concern. Thus a financial plan should maintain the required proportion between the fixed charges, the obligations and the liabilities in such a manner that the profitability of the organisation is not adversely affected.

3.5.2 Ingredients of a Financial Plan

Just as companies differ in size and products, financial plan are not the same for all companies. However, there are some common elements. These are:

1. **Sales Forecast**: All financial plans require a sales forecast. Perfectly accurate sales forecast are not possible because sales depend on the uncertain future state of the economy. A good sales forecast should be the consequence of having identified all valuable investment opportunities.
2. **Pro-forma Statements**: The financial plan will have a forecast balance sheet, an income statement, and a sources-and-uses statement. These are called pro-forma statements.
3. **Asset Requirements**: The plan will describe projected capital spending. In addition, it will discuss the proposed uses of net working capital.
4. **Financial Requirements:** The plan will include a section on financing arrangements. This part of the plan should discuss dividend policy and debt policy. Sometimes firms will expect to raise equity by selling new shares of stock. In this case the plan must consider what kind of securities must be sold and what methods of *issuance* are most appropriate.

5. **Economic assumption**: The plan must explicitly state the economic environment in which the firm expects to be in over the life of the plan. Assumptions need to be made for the level of interest rates.



CHECK YOUR PROGRESS

Q1. What do you mean by financial planning?

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Q2. Write down the characteristics of a good financial plan.

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Q3. Write down the four steps in financial planning.

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3.6 FINANCIAL POLICIES

The financial policies of an organisation are related to the availability, usage and management of funds. We discuss these policy areas under the heads Procurement of Funds and Utilization of Funds.

A. Procurement of Funds: Fund is required in order to maintain an adequate balance of cash flow to keep the business operating and also for development. Fund is required at the right time and at the right cost. The important decision that needs to be taken with regard to fund procurement is the type of capital structure or the proportion of different securities that can be used for raising fund. There should be a healthy mix of equity and debt in a company's capital structure

to maximize returns to its owners. The sources of raising finance can be categorised into long-term and short-term finance on the basis of the period for which funds are required. (Refer to unit III). A company has many alternatives while raising funds such as equity shares, term loans from financial institutions, debentures, public deposits, bank finance, inter-corporate deposits, and trade credit. All these funds carry a cost which may be interest on loans, debentures, deposits, etc. or dividend on equity. The weighted average cost of the different types of fund secured should be kept as low as possible. If the cost of financing becomes too high, the company's profitability and hence its growth prospect suffer. The time factor while mobilising funds should be kept in mind. For instance, it is easier to get investor subscription for an equity issue during a boom period. While during a recession, the bond markets outperform equity markets. Therefore, right timing of a capital issue becomes crucial while raising funds from various sources.

Another important policy issue relates to dividends. The company should normally, strike a fine balance between paying reasonable amounts to investors who are looking for a steady income on their equity investment and those investors who would want the company to invest the 'surplus' generated by the company in projects having great growth potential. Every company should have a healthy dividend policy i.e. whether to pay dividends or retain the surplus for expansion, modernisation, etc. Earnings and dividends affect the readiness of shareholders to offer funds in times of necessity. Companies generally opt for a stable dividend policy wherein dividends are declared every year as a sort of reward for loyal shareholders. Stable dividends commands higher share prices because investors are more favourably disposed towards companies whose shares provide dividends, they are sure of receiving than they are towards companies which do not pursue a stable dividend policy.

B. Utilization of Funds: The amount of fund raised through various sources at the right time and the right cost, should be put to the

right use. A proper balance should be maintained while investing in fixed assets and current assets. Fixed assets involve investment of funds in land and buildings, plant and machineries, furniture and fittings, office equipments, etc. over a fairly long period of time. One should also carefully evaluate whether the fixed asset should be owned or leased. Leasing would be advantageous when the assets in question are sparingly used and the assets are subject to rapid technological obsolescence. When assets are purchased, one should look at crucial aspects such as wear and tear, obsolescence rate, depreciation policy, etc. Funds needed for acquiring fixed assets are known as long-term finance. The sources of financing fixed assets would include term loans, equity capital, debentures.

Apart from investment in fixed assets, a firm has also working capital requirements for financing its current assets. Working capital refers to the excess of current assets over current liabilities. Current assets are cash and other assets that are expected to be converted to cash within the year. Working capital may be expressed in two ways- Gross Working Capital and Net Working Capital. The working capital position determines the firm's profitability and liquidity. Liquidity means the firm's ability to settle bills on time which is possible when it has sufficient cash. Current assets like cash should be deployed properly to improve overall profitability. Efficient management of funds results in smooth functioning of the operating cycle (the time taken for the conversion of cash into raw materials, raw materials into work-in-process, work-in-process to finished goods, finished goods into receivables, receivables into cash).

Sources for financing current assets: To finance working capital needs, firms tap many sources such as trade credit, discounting of bills, letters of credit, bank finance, commercial papers, public deposits, etc. Trade credit is the credit extended by the suppliers of goods and services. Bank finance includes loans and overdraft facilities. Under the cash credit facility, borrowers can draw up to a specified limit based on the security margin. Under bill discounting,

banks discount bills raised on the buyers of a company's goods. Bankers also offer letters of credit in favour of suppliers of raw materials. These letters of credit help in the purchase of raw materials on a credit basis and are usually discounted by the suppliers with their respective bankers. Banks also help reputed companies to raise short-term funds through commercial paper (CP). These are short-term promissory notes with fixed maturity periods. They are normally issued at a discount and are in large denominations (Rs. 5lakhs and above) with maturity period varying between 3 to 6 months. Companies may also raise money from the general public in the form of public deposits on the strength of its goodwill and market standing.

Thus, we can see from above that firms have two types of fund requirement viz. long-term funds and short term funds to finance their fixed asset and current assets respectively. In the next section, we throw light on some aspects of short term financial policy.

3.7 SOME ASPECTS OF SHORT-TERM FINANCIAL POLICY

The policy that a firm adopts for short term finance will be composed of at least two elements:

1. **The size of the Firm's Investment in Current Assets:** This is usually measured relative to the firm's level of total operating revenues. A flexible or accommodative short-term financial policy would maintain a high ratio of current assets to sales. A restrictive short-term financial policy would entail a low ratio of current assets to sales.

   Flexible short term financial policies include:

   - Keeping large balances of cash and marketable securities.
   - Making large investments in inventory.
   - Granting liberal credit terms, which results in high levels of accounts receivables

   Restrictive short-term financial policies are:

- Keeping low balances of cash and no investment in marketable securities.
- Making small investments in inventory.
- Allowing no credit sales and no accounts receivable.

2. **The Financing of Currents Assets:** This is measured as the proportion of short-term debt to long-term debt. A restrictive short-term financial policy means a high proportion of short-term debt relative to long-term financing, and flexible policy means less short-term debt and more long-term debt.

   There is no definite answer to what should be the most appropriate amount of short-term borrowing. The following considerations are worthwhile.

   - **Cash Reserves**. The flexible financing strategy implies surplus cash and little short-term borrowing. This reduces the probability that a firm will experience financial distress.
   - **Maturity Hedging**. Most firms finance inventories with short-term bank loans and fixed assets with long-term financing. Firms tend to avoid financing long-term assets with short-term borrowing. This type of maturity mismatching would necessitate frequent financing and is risky, because short-term interest rates are more volatile than longer rates.
   - **Term Structure**. Short-term interest rates are normally lower than long-term interest rates. This implies that, on average, it is more costly to rely on long-term borrowing than on short-term borrowing.

3.8 FORECASTING FINANCIAL REQUIREMENTS

Financial forecasting is a systematic projection of the expected action of finance through financial statements. It is a kind of plan, which will be formulated at a future date for a specified period. There are three methods of forecasting financial requirements. They are as follows-

1. **Traditional Methods:** Under this method, a firm's needs in terms of the number of days for which its sales are tied up in an individual

balance sheet item are taken into account. It is a tie in between forecasting sales and forecasting financial requirements.

2. **Engineering Analysis:** It is a combination of technical know-how and judgement.
3. **Operation Analysis:** It relies mainly on judgement and on an understanding of the different kinds of operations in which a firm is engaged.

3.8.1 Factors to be Considered For Estimating Financial Requirements

1. **Cost of Financing:** Cost of financing such as advertisement expenses, brokerage on securities, commission on underwriting, etc. are expenses incurred for raising finance from the public. It should be the minimum.
2. **Repayment Date:** The time for which finance is required should be taken into account while estimating financial requirements of a concern. This helps in determining the repayment date.
3. **Liquidity:** Liquidity means ability to produce cash on demand. Due regard should be given to it as poor liquidity may lead to insolvency.
4. **Interest Payment:** Interest payment should be the minimum.
5. **Claim on Assets:** The borrowings of the concern may result in a charge on its assets. This may restrict their use and jeopardise the manoeuvrability of the concern.
6. **Control:** The capital structure of a concern should be such as to ensure that control does not pass into the hands of outsiders. If too many people are allowed to control the concern, the operations and performance may go out of control.
7. **Risk:** The financial manager is more concerned about the financial risk which is created by a high-equity ratio than about any other risk. Thus it is better not to launch risky projects when equity finance is not available to the desired extent.

8. **Seasonality:** The financial requirements of a concern are highly influenced by seasonality which cannot be easily predicted. The events like strikes, product failures, changes in the supply prices, changes in technology or consumer tastes significantly affect financial requirements.
9. **Cost of Promotion:** Expenses incurred before the incorporation of a company are called promotion expenses. These include expenses on preliminary investigation, accounting, marketing and legal advice, etc.
10. **Cost of Fixed Assets:** The amount invested in fixed assets like land and buildings, plant and machinery, furniture, etc., is called fixed capital. The need of fixed capital should be based on estimates supplied by the production and engineering departments.
11. **Cost of Current Assets:** The requirements of current assets such as cash, stock of goods, book debts, etc., should be assessed on the basis of estimated sales and production schedules or projections.
12. **Cost of Establishing the Business:** It consists of operating losses which have to be sustained during the initial or gestation period of a company. The fixed capital requirement of a concern includes promotional expenses, cost of establishing the business, cost of financing and cost of fixed assets. Of these, the cost of promotion and cost of establishing the business are relevant for new companies. On the other hand, working capital requirements is a matter of cost of current assets. Thus the capital requirements of a concern may be studied under the heads: fixed capital and working capital.

3.9 TAXATION AND FINANCIAL PLANNING

Since the income of all firms is subject to tax at the rate determined by the Finance Act passed every year by the Parliament, the taxation provisions have a vital effect on the Financial Planning of a firm. They are as follows:

(i) Decisions on Capital Structure: The tax implications play a vital role while determining the Debt-Equity mix of the firm. A firm can raise funds through shares or loans including debentures. But it is pointed out that the interest paid on loan is deductible as an expense for tax purpose while the dividend paid on share capital is not deductible as an expense. Thus raising money through loan is cheaper than of through shares.

(ii) Decisions on Capital Budgeting: A firm should also consider tax implications while taking budgeting decisions. For instance, a company should consider the following in order to determine the amount of investment required in a capital investment project.

(a) The amount of tax, the company can save on account of writing off the loss on the sale of the old assets.

(b) The amount of tax, the company is required to pay on any profit made on the disposal of old assets.

(c) The amount of tax, the company can save by virtue of investment allowance or other benefits on acquisition of new plant and machinery, ship or aircraft etc.

(d) The amount of tax, saved by the company as a result of depreciation on the assets being allowed as business expenditure for the purpose of tax.

(iii) Decisions on Dividend: The company should consider the tax implications as and when it takes dividends decision. Although the company should pay income tax when it earns income, the dividends are taxed as and when they are paid to individual shareholders. In this connection, it is needless to mention that the shareholders need not pay income tax unless dividends are received. Thus, the companies whose shareholders are in the high tax brackets should retain the earnings rather than distributing them by way of dividends. But at any rate, in case dividends are to be paid, it is advisable to pay such dividends by way of shares. This is because of the fact that dividends in the form of shares (i.e., bonus shares) are subject to lower rate of tax.

(iv) Method of Depreciation: The company should also consider the tax implications while determining the method of depreciation. This is because the rate of depreciation in the case of written down value method is generally three times that of the rate of depreciation in the case of straight line method. Thus if a company desires to have huge funds during the initial periods of the project by making savings through taxation, it is advisable to charge depreciation as per the written down value method.



CHECK YOUR PROGRESS

Q4. Fill in the blanks with appropriate words

a. Trade credit, discounting of bills, letters of credit, bank finance, commercial papers, public deposits, etc. are sources for financing of ……

b. …… means the ability to produce cash on demand.

c. Flexible short term financial policies would require making…….…… investments in inventory.

d. The financial requirements of a concern are highly influenced by …….. which cannot be easily predicted.

e. A restrictive short-term financial policy would entail a ……ratio of current assets to sales.

Q5. State True / False for the following statements:

a. There are two types of financial plans.

b. A good financial plan ensures the optimum utilization of funds.

c. Financial planning leads to increased cost of financing.

d. Financial planning should be done without a consideration of tax provisions.



3.10 LET US SUM UP

In this unit, we have discussed the following aspects:

- Financial planning is the process of analysing a firm's investment options (investment decision), estimating the funds requirement (liquidity decision) and deciding the sources of funds (financing decision).
- The objectives of financial planning are therefore, is to a) ensure adequate and regular capital flow from various sources, b) ensure liquidity throughout the year, c) minimize the cost of financing and d) to facilitate financial control.
- Financial planning involves four steps viz. a) Establishing Objectives, b) Establishing the Amount of Capital Required c) Determining the Capital Structure and d) Formulating Financial Policies.
- A sound financial plan should possess the characteristics of Simplicity, Flexibility, Intensity, Foresightedness, Cost Effectiveness, Objectivity, Liquidity and Profitability.
- The common elements of a financial plan are - Sales Forecast, Proforma Statements, Asset Requirements, Financial Requirements and Economic assumption.
- A company has many alternatives while raising funds such as equity shares, term loans from financial institutions, debentures, fixed deposits and bank finance for working capital requirements.
- Fixed assets involve investment of funds in land and buildings, plant and machineries, furniture and fittings, office equipments, etc. over a fairly long period of time.
- Current assets are cash and other assets that are expected to be converted to cash within the year.
- The three methods of forecasting financial requirements are - Traditional Methods, Engineering Analysis and Operation Analysis.
- The factors considered for estimating financial requirements are the cost of financing, repayment date, liquidity, interest payment, claim

to assets, control, risk, seasonality, cost of promotion, cost of fixed assets, cost of current assets and cost of establishing the business.

- Tax provisions have a vital effect on the financial planning of a firm. It effects the capital structure decisions, capital budgeting decisions, dividend decisions and. Depreciation Method.



3.11 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition

3.12 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: Financial planning is the process of determining objectives, policies, procedures and programmes to deal with the financial activities of an organization.

Ans to Q.2: Simplicity, Flexibility, Intensive use, Cost.

Ans to Q.3:

(i) Establishing objectives.
(ii) Estimating the amount of capital required.
(iii) Determining the capital structure.
(iv) Formulating financial policies.

Ans to Q.4: a) Current assets b) Liquidity c) Heavy
d) Seasonality e) Low

Ans to Q.5: a) True b) True c) False d) False



3.13 MODEL QUESTIONS

Q1. What is financial planning? Discuss the factors to be considered while estimating financial requirements.

Q2. Explain how tax provisions effect the financial planning of a firm.

Q3. What do you mean by current assets? What are the sources of financing such assets?

Q4. Why do you think financial planning is necessary?

Q5. What should be the characteristics of a good financial plan?

Q6. What are the elements of a firm's financial plan?

Q7. Discuss the objectives of financial planning.

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UNIT 4: CAPITALISATION

UNIT STRUCTURE

4.1 Learning Objectives

4.2 Introduction

4.3 Meaning of Capitalisation

4.4 Capital and Capitalisation

4.5 Theories of Capitalisation

4.6 Fair Capitalisation

4.7 Over Capitalisation

4.8 Under Capitalisation

4.9 Over Capitalisation Vs Under Capitalisation

4.10 Water Capital

4.11 Let Us Sum Up

4.12 Further Reading

4.13 Answers To Check Your Progress

4.14 Model Questions

4.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

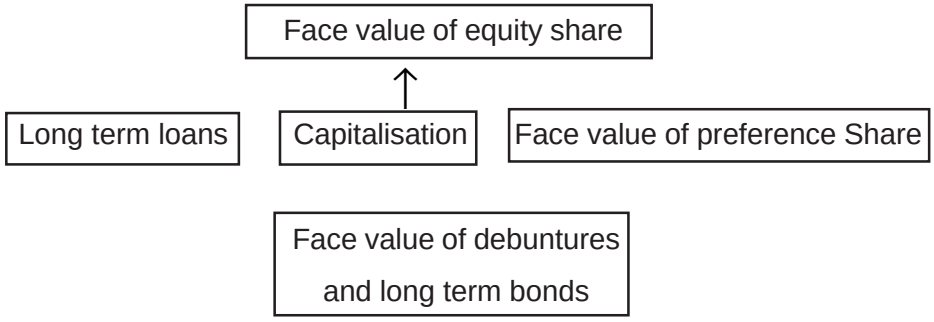
- know the concept of capitalisation
- discuss the theories of capitalisation
- explain the concept of over capitalisation, undercapitalisation and water capital
- distinguish between over capitalisation and under capitalisation
- know the causes, evil and remedies of over-capitalisation and under-capitalisation

4.2 INTRODUCTION

The apprisal of the funds needed by the company is one of the major task of a finance manager. It should be done in such a way that the total amount of funds should not be more or less than the required amount. Therefore, every firm should attempt to establish the optimum amount of capital.

4.3 MEANING OF CAPITALISATION

Capitalisation refer to total amount of capital employed in a business. It is an important constituent of financial plan. Capitalisation comprises all sources of capital which are employed to raise desired amount of capital for a firm. The term capitalisation may be defined as the total amount of long term funds.



Guthmann and Dougall define capitalisation "as the sum of the par value of the outstanding stocks and the bonds."

A.S. Dewing ineludes capital stock and debt within the term capitalisation.

Bonneville and Deway defines, 'capitalisation as the balance sheet values of stock and bonds outstanding'.

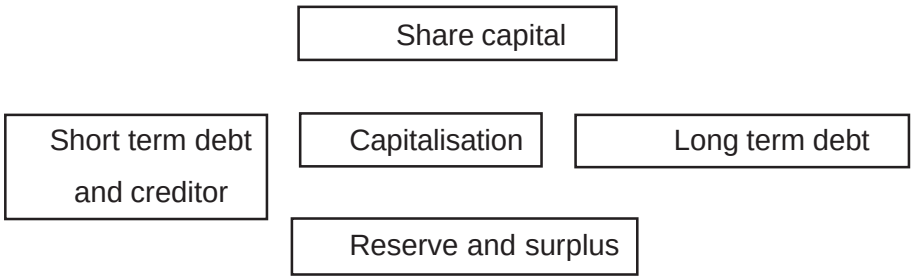
Gerstanbug states that, 'capitalisation comprieses of a company's ownership capital which include capital stock and surplus in whatever form it may appear and borrowed capital which consist of bonds or similar evidences of long term debt.'

From the above definationg, it may be said that capitalisation is the process of determining required amount of long term funds needed by the company to satisfied their objectives. It is a process of bulding capital structure and tapping the sources of capital.

However, in modern concept of capitalisation the short term debt and creditors are also included in the capitalisation.

In the words of walker and Baughn, 'The use of capitalisation refers to only long term debt and capital stock, and short term creditor do not constitute supplier of capital is erroneous. In reality total capital is furnished by short term creditors and long term creditors.'

Thus, according to the modern concept, capitalisation includes share capital, long term debt, short term debt, reserve and surplus. (However, this view has not still recognised widely)



The need for capitalisation arises in all the areas of business cycle i.e.

At the time of promotion of a company

At the time of expansion of the company

At the time of amalgamation of two or more companies

At the time of reorganisation of capital structure

4.4 CAPITAL AND CAPITALISATION

Capital	Capitalisation
a) The term capital refer to the total investment of a company in money.	Capitalisation refers to the par value of securities.
b) The term capital is universal concept, which is used in all types of organisation (Pvt. Public, partnership or propritory concern)	The term capitalisation is not applicable to the sole propritory concern.

4.5 THEORIES OF CAPITALISATION

To determine the amount of capitalisation, the following theories are commonly used.

(1) Cost theory of capitalisation : According to this theory, capitalisation of a firm is determined on the basis of cost of different assets. In a real life

situation, the amount of capitalisation for a new business is arrived at by adding up the cost of fixed assets, the amount of working capital and the cost of establishing new business (plant and machinery, land and building etc).

Example : If a firm requires Rs. 10,00,000/- to pay for preliminery expences, fixed assets, cost of selling securities and to provide with necessary working capital, it will be capitalised for Rs 10,00,000/-.

Cost theory helps the promoter to fixed the total amount of capital needed for establishing the business.

However, base on the following grounds the cost theory has not been considered as efficient.

i) It takes into consideration only the cost of assets and not the early capacity of the investment.

ii) It is not suitable for such companies where its earnings are varying.

2) Earning theory of capitalisation : The main theme of the earning theory is to determine the amount of capital of a company depending upon its earnings and the expected fair rate of return on its capital invested. The approach of earning theory is the best method of capitalisation for the existing concern. It may not be suitable for the new companies, as the estimation of earnings is fairly a risky and difficult task.

For example, if a new company estimates that its annual average earnings will amount to a sum of the Rs 1,00,000/- while the companies in the same industry are earning a return of 20% on their capital employed, the amount of capitalisation for the company would be :

$$= \frac{1,00,000 \times 100}{20}$$

= Rs. 5,00,000/-

This methods correlates the value of a company directly with its earning capacity. Earning theory act as check on the cost of establishing new companies.

The process of estimating earnings, for a new company is very difficult. A mistake commited at the time of estimuting the earnings will be directly influencing the ammount of capitalisation.

Having arrived at the estimated earnings figures, the financial manager will compare with the actual value of capitalisation of similar earrning companies and will determine wheather the company is fairly capitalised, under capitalised or over capitalised.

4.6 FAIR CAPITALISATION

In case of fair capitalisation,

Real value = Book value = Fair capitalisation.

Capitalisation is one of the important areas of financial management. The securities and the size of the amount should be selected to attain the objective of a corparate entities (wealth maximisation). Therefore, it is very essential for a business firm to have fair capitalisation. This can be achive by balancing the debt and equity component in the capitalisation. A company should neither be over capitalised nor under capitalised.

To understand the concept of fair capitalisation, it would be necessary to analysing the situation of overcapitalisation and undercapitulisation.

4.7 OVER CAPITALISATION

In case of over capitalisation,

Real value < Book value = Over-capitalisation

A business is said to be overcapitalised when :

i) Capitalisation exceeds the real economic value of its net asset.

ii) A fair return is not realised on capitalisation.

iii) Business has more net assets than its needs.

Example :

Capitalisation is Rs 5,00,000/- with on expected fair returnof 10%. If the actual earnings are 50,000/-, than the firm is properly capitalised. However, if it earns only Rs. 40,000/-, then the firm will be said to be overcapitalised because its proper capitalisation for this level of earnings would be Rs 40,0000/- (Rs. 40,000 / 10%) and the actual rate of return is only 8% against the expected rate of 10%.

A firm is over-capitalised when its earnings are inadequate to yield a fair return on the amount of capital invested in the business. In the other words, a company is overcapitalised when its actual profits are inadequate to pay the dividends and interest at proper rate.

According to Bonneville, Deway and kelly, 'when a business is unable to earn fair rate on its outstanding securities, it is overcapitalised'.

Thus, overcapitalisation may be considered to be in the nature of redundant capital. When the aggregate par value of its shares and debentured exceeds the true value of its fixed assets is known as overcapilisation.

Causes of overcapitalisation

The following are the main causes of overcapitalisation.

1. Over estimation of earning capacity.
2. Liberal dividend policy.
3. Inflated assets or inadequate provision of depriciation.
4. High promation expenees and payment of excessive amounts for acquiring goodwill and fixed assets.
5. High rates of taxation.
6. Raising of more money by issue of shares and debentures than what the company profitable use.
7. Hight cost of leverage : i.e. borrowing large sums of money at higher rate of interest.
8. Inadequate demand of the product.

Effects of overcapitalisation

1. Over capitalised company connot pay good dividends because of poor earnings.
2. Overcapitalised company loss its goodwill in the market.
3. The market price of share will decline. This will affect the investor confidence in the company and facing difficulties in obtaining capital.
4. This will lead to reorganisation of the company and even may lead to liquidation.
5. The shares of an over capitalised company have small value as collateral securities.
6. Overcapitalised concern also affect the society at large i.e. loss to consumer, misutilisation of resources, recession etc.

Remedies for over capitalisation

The over capitalised company should resort :

1. To plaughing back of earnings.
2. To have efficient management. The company should go for complete reorganisation.
3. Reduction in funded debt.
4. Redemption of preferred stock, if carries a high dividend rates.
5. Reduction in par value of stock.
6. Reduction in number of shares of common stock.

4.8 UNDER CAPITALISATION

In case of under capitalisation,

Real value > Book value = Under capitalisation

A firm is considered under capitalised when its actual capitalisation is lower than the proper capitalisation based on its earning capacity. It is the opposite of over-capitalisation.

In the words of Gerstanberg, 'A company may be under capitalised when the rate of profits it is making on the total capital is exceptionally high in relation to the return enjoyed by similarly situated companies in the same industry, or when it has too little capital with which to conduct its business'.

Thus, under capitalisation comes about as a result of :

- Under estimation of future earnings at the time of promotion.
- An unforeseeable increase in earnings resulting from the later development.
- Under capitalisation exist when a company earns sufficient income to meet its fixed interest and fixed dividend charges and is able to pay a considerably better rate on its equity shares than the prevailing rate on similar shares in similar business.

Under capitalisation may also be defined as an excess of true asset values over the aggregate of stocks and bond outstanding. It can be ascertained by comparing the book value of equity shares with thair real values. If the book value of the equity shares is lower than the real value, the company is said to be under-capitalised.

Causes of under capitalisation : The possible causes of under capitalisation are as follows :

1. Under estimation of initial earnings.
2. Conservative asset management.
3. Under estimation of capital requirement.
4. High level of efficiency and unexpected increase in earnings.
5. Conservative dividend policy resulting in large retained earning, which improves the earning capacity.

Effects of undercapitalisation

The possible effects of undercapitalisation are as follows :

1. High profitability will attract new entrepreneurs into industry and create acute competition to the under-capitalised concern.
2. Earning per share and dividend par share will increase and this will result in to adoption of liberal dividend policy and induce workers to demand more wages. Consumer may feel that the company exploiting them.
3. Conservative asset management policy will lead to under valuation of assets and this will result in more secret profits.
4. High earnings per share may result in the increase in share prices. It may encourage management to manipulate the share value.
5. Adaptability to changed circumtances may be impaired and expansion programmes may slow down.

Remedies for under capitalisation

Resorting to the following measures may rectify the problem of under capitalisation.

1. The under-capitalised concern may issue bonus shares or undertake additional issue of shares and debentures to increase the total capital. It is an appropriate remedy. It will reduce the dividend per share and average rate of earnings.
2. The existing shares may be split up and their par value may be increased. This will reduce dividend per share.
3. The assets may be revised upwards and the existing sharehalders may be given shares of higher share par value in exchange for their old share.

4.9 OVER CAPITALISATION VS UNDER CAPITALISATION

Comparision between over capitalisation and under capitalisation.

Overcapitalisation	Undercapitalisation
1. Real value < Book value = Over capitalisation	1. Real value > Book value = under capitalisation.
2. Over capitalisation is a serious concern for the company.	2. Under capitalisation is not a serious concern for a company as compared to over capitalisation
3. Over capitalisation involves great-strain on financial resources.	3. Under capitalisation implies high rate of earnings on its share.
4. The remidial procedure of over capitalisation is more difficult.	4. The remidual procedure of under capitalisation are much easily applied.
5. Over capitalisation is a common phenomena.	5. Under capitalisation is a rare phenomena.

4.10 WATER CAPITAL

In the words of Hogland, 'A stock is said to be watered when its true value is less than its book value'.

When the stock of capital of a company is not represented by asset of equivalent value, it is termed as 'watered stock' signifying presence of water in the capital of the company.

The problem of water capital generally arises at the time of incorporation of the company, but in some cases, it may also arise in existing company. The situation may arise due to the following reasons.

1. The services of the promoters are valued highly and they are paid usually in the form of shares of the company. As such, share capital is increased but no assets are created.
2. Acquiring assets by the company at high price.
3. Adopting defective depriciation policy.

4. Acquisition of intangible assets uch as goodwill, patents etc. at high prices such as goodwill, patents etc.



CHECK YOUR PROGRESS

Q 1: What do yoy mean by capitalisation.

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Q 2: Mention two theories of capitalisation.

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Q 3: Fill in the blanks with appropriate words :

(a) Capitalisation is an important constituent of .....

(b) Real value is equal to book value is known as .....

(c) When the business has more net assets than its need . It is known as .....

(d) When the company underestimate future earnings, the company will become ..... capitalised.

(e) The modern concept capitalisation includes ..... and .....

Q 4: State wheather each of the following statements is 'True' or 'False'.

(i) The term 'capitalisation' is used only in relation to companies.

(ii) Water capital may be the causes of over-capitalisation.

(iii) Undercapitalisation is a common phenomena.

(iv) Cost theory of capitalisation applicable in newly established concern.

(v) Excess capital is not same as overcapitalisation.



4.11 LET US SUM UP

In this unit, we have discussed the following aspects :

- Capitalisation is one of the important part of the financial planning.
- To determine the amount of capitalisation, the following theories are comonly used :

1) Cost theory of capitalisation.
2) Earning theory of capitalisation.

- Capitalisation may be classified in the following types.
  1) Over-capitalisation – Earnings of a company do not justify the amount of capital invested in buseness.
  2) Under capitalisation – When a company actual capitalisation is lower than it proper capitalisation.
  3) Fair capitalisation – i.e. neither overcapitalised nor undercapitalised (Book value = Real value)
- Over-capitalisation is a common phenomena, but under-capitalisation is a rare phenomena.
- Over-capitalisation much more dangareous for the campany as compared to the under-capitalisation.
- Over capitalisation effects the sharaholders and endangers the economic stability. Under-capitalisation accelerates the cut-throat competition amongst the companies.
- Water capital represents when capital of a company is not represented by its assets of equivalent value.
- Water capital may be the causes of overcapitalisation. Water capital arises usually at the time of incorporation of the company.



4.12 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition

4.13 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: Capitalisation refer to the capital employed in a business. It is the par value of shares and debentures.

Ans to Q.2: Cost Theory of capitalisation and
Earning theory of capitalisation

Ans to Q.3: (a) Financial Planning
(b) Fair Capitalisation
(c) Over-capitalisation
(d) Under-capitalisation
(e) Long term capital and short term capital

Ans to Q.4: (i) True (ii) True (iii) False (iv) True
(v) True.



4.14 MODEL QUESTIONS

Q1: What is capitalisation? Discuss its theories.

Q2: What do you mean by over capitalisation? Discuss its causes, effecty and remedies.

Q3: What do you mean by under capitalisation? Discuss its causes, effects and remedies.

Q5: Distinguish between over capitalisation and undercapitalisation.

Q6: What is water capital? Discuss the causes of water capital accured in a company.

UNIT 5: CAPITAL STRUCTURE

UNIT STRUCTURE

5.1 Learning Objectives

5.2 Introduction

5.3 Meaning and Importance of Capital Structure

5.4 Patterns of capital structure

5.5 Kinds of capital structure

5.6 Importance of Capital Structure Decision

5.7 Elements of a well planned capital structure

- 5.7.1 Optimum Capital Structure
- 5.7.2 Features of an Optimal Capital Structure
- 5.7.3 Limitations in designing optimal capital structure

5.8 Determinants of Capital Structure

5.9 Theories of Capital Structure

- 5.9.1 Net Income (NI) Approach
- 5.9.2 Net Operating Income (NOI) approach
- 5.9.3 Modigliani – Miller (MM) Approach
- 5.9.4 Traditional approach

5.10 Factors to be considered while determining capital structure

5.11 Approaches to Determine Appropriate Capital Structure

- 5.11.1 EBIT-EPS Analysis
- 5.11.2 ROI-ROE Analysis

5.12 Let Us Sum Up

5.13 Further Reading

5.14 Answers to Check Your Progress

5.15 Model Questions

5.1 LEARNING OBJECTIVES

After going through this unit you will be able to:

- define the meaning of capital structure
- explain the importance of capital structure

- explain the features of an optimum capital structure
- explain the determinants of capital structure
- explain EBIT – EPS Analysis and ROI-ROE Analysis

5.2 INTRODUCTION

In the earlier unit we have discussed about leverage. This unit aims to provide you more information on capital structure and dividend decision.

A company needs capital to start its business. The required capital can be collected from various sources. It means that the capital of a company consists of funds which are collected from different sources like issuing shares, debentures or by taking loans from banks and other financial institutions. The management of the company has to decide the preparation of funds to be collected from the various sources and this decision is reflected through the capital structure of the company.

5.3 MEANING AND IMPORTANCE OF CAPITAL STRUCTURE

Any company requires funds to run and maintain its business. The required funds may be raised from short-term sources or long term sources. Capital structure is concern with long-term sources of finance. The capital structure is how a firm finances its overall operation and growth by using different sources of fund. The term capital structure is generally taken as the mix of long – term sources of funds, such as equity shares, reserves and surpluses, preference share capital, debenture and long-term loan. In simple words, capital structure is used to represent the proportionate relationship between debt and equity. Capital structure decision is a significant managerial decision. The financial stability of a company and risk of insolvency to which it is exposed is primarily dependent on the source of its funds as well as the type of assets it holds.

Capital can be breakdown in to two components viz. debt capital and equity capital. Bonds and debentures are the major sources of debt capital for the companies. Cost of debt capital is lower than the cost of

other forms of financing because lender demand relatively low return due to less risk involved. It is less risky for the lender because:

a) They have a higher priority of claim against earnings and refund of principal amount at the time of winding up.

b) They can exert far greater legal pressure against the company to make payment.

Where debt capital is repaid at some future date, equity capital is expected to remain in the firm for an indefinite period of time. Basic source of equity capital are equity share, preference share and retained earnings. Equity shares are the most expensive form of financing followed by retained earnings than preference shares.

According to the definition of **Gerestenbeg,** "Capital Structure of a company refers to the composition or make up of its capitalization and it includes all long-term capital resources".

According to the definition of **James C. Van Horne,** "The mix of a firm's permanent long-term financing represented by debt, preferred stock, and common stock equity".

According to the definition of **prasanna chandra,** "The composition of a firm's financing consists of equity, preference, and debt".

5.4 PATTERNS OF CAPITAL STRUCTURE

Usually there are two sources of funds used by a firm for raising capital. They are debt and equity. A new company cannot collect sufficient amount of debt fund due to lack of creditworthiness in the market. Thus, they have to depend on equity capital. Capital structure should be formulated in such a way that it would be safe and economical. Different firm can follow different pattern of capital structure depending on their necessity. Following are the different patterns of capital structure:

- Only equity shares.
- Equity shares and preference shares.
- Equity shares and debentures.
- Equity shares, preference shares and debentures.

5.5 KINDS OF CAPITAL STRUCTURE

Capital structure can be of various kinds. These are discussed below:

1. **Horizontal capital structure**: When a firm has zero debt component in its capital structure, than such capital structure is called horizontal capital structure. Absence of debt capital in the financial structure results in to lack of financial leverage. Expansions and diversifications of the firm are financed through equity capital and retain earnings. This type of capital structure is stable.
2. **Vertical capital structure:** When the capital structure is formed by huge amount of debt capital and small amount of equity share, such capital structure is called vertical capital structure. In vertical capital structure quantum of retained earnings is low and the dividend pay-out ratio is quite high. This type of capital structure is unstable and high risky due to presence of high component of debt in the capital structure.
3. **Pyramid shaped capital structure:** Pyramid shaped capital structure consist of a large portion of equity capital and retained earnings. The cost of share capital and the retained earnings of the firm is usually lower than the cost of debt. This type of capital structure indicates that the firm is risk averse conservative firm.
4. **Inverted pyramid capital structure:** When the capital structure consist of an ever increasing component of debt but a small component of equity capital and reasonable level of retained earnings such capital structure is known as Inverted pyramid capital structure. Though inverted pyramid capital structure is highly vulnerable, in the recent past firms across the globe are resorted to this type of capital structure.

5.6 IMPORTANCE OF CAPITAL STRUCTURE DECISION

Financial decisions are very crucial for every company. The objective of any company is to mix the permanent sources of funds used by it in a manner that will maximize the company's market price. It is a significant

managerial decision which influences the risk and return of the investors. The company will have to plan its capital structure at the time of promotion itself and also subsequently whenever it has to raise additional funds for various new investments decisions. Wherever, the company needs to raise finance, it involves a capital structure decision because it has to decide the amount of finance to be raised as well as the source from which it is to be raised. Following are the importance of designing a proper capital structure.

a. **Reflect firm's strategy:** Overall future strategy of a firm is reflected in its capital structure. If a firm includes more debt capital in its capital structure, it implies that the firm wants to grow at a faster peace.

b. **Value maximization:** If a firm have a properly designed capital structure, the aggregate value of the claims and ownership interest of the shareholders are maximized.

c. **Cost minimize:** A properly designed capital structure minimizes cost of financing of the company.

d. **Increase in market price of shares:** A balanced capital structure increase dividend receipt of the shareholders (earning per shares). This lead to increase in the market price of shares.

e. **Indicator of risk profit:** By analyzing capital structure one can get a reasonably accurate idea about the risk profit of the firm. If a firm uses excessive debt capital the fixed cost of capital increase, thereby increasing its risk. Absence of long term debt in the capital structure of a firm implies that either it is risk averse or it has cost of equity capital or cost of retained earnings less than the cost of debt capital.

f. **Tax management tool:** Since interest on borrowings is tax deductible, it will be profitable for a firm to use debt in its capital structure to the maximum possible extent.

5.7 ELEMENTS OF A WELL PLANNED CAPITAL STRUCTURE

Following are the elements of a well planned capital structure:

- **Consistency:** The capital structure should be consistent with the philosophy and future planning of the firm. If the firm has high risk

bearing capacity and aggressive philosophy than the capital structure must include debt capital to the maximum possible extent.

- **Feasibility:** The capital structure should be feasible and practical. It should be workable within the amount of equity capital, debt capital and retained earnings expected to be available to the firm.
- **Long tenure:** The capital structure should be planned for a reasonably long tenure. It should cover workings of at least six to eight years of the project. Expansion, diversification, change in product line etc. should be considered in the planning of the capital structure.

5.7.1 Optimum Capital Structure

In capital structure decision, the financial manager has to come out with an optimum capital structure. Optimal capital structure refers to the combination of debt and equity in total capital that maximizes the value of the company. An optimal capital structure is designated as one at which the average cost of capital is the lowest which produces an income that leads to maximization of the market value of the securities at that income. In practice, determination of an optimum capital structure is a very difficult proposition. A finance manager can attain his objective of optimum capital structure up to a certain extent with the help of the following considerations:

(i) The finance manager should choose a source of financing having a fixed cost for enhancing the return on equity shareholders in case the Return on Investment (ROI) is more than the fixed cost of funds. Thus the company can take advantage of favourable financial leverage.

(ii) A high corporate tax provides leverage with respect to the capital structure management. High debt in effect provides a form of income tax leverage to the equity shareholders.

5.7.2 Features of an Optimal Capital Structure

Financial Manager should develop an appropriate capital structure, which is helpful to maximize shareholders wealth. This

can be possible when all factors which are relevant to the company's capital structure are properly analysed, balanced and considered. An appropriate capital structure should have the following features:

i. **Profitability:** The company should make maximum use of leverage at a minimum cost. In other words, it should generate maximum returns to owners without adding additional cost.

ii. **Flexibility:** Flexible capital structure means it should allow the existing capital structure to change according to the changing conditions without increasing cost. It should be possible for the company to provide funds whenever needed to finance its possible activities. The company should be able to raise funds whenever the need arises and also retire debts whenever it becomes too costly to continue with that particular source.

iii. **Solvency:** The use of excessive debt threatens the solvency of the company. Debt should be used till the point where debt does not add significant risk, otherwise use of debt should be avoided.

iv. **Control:** The capital structure should involve minimum dilution of the control of the company. A company that issues more and more equity, dilutes the power of existing shareholders as number of shareholders increases. Also raising of additional funds through public issue may lead to dilution of control.

v. **Cost of capital:** If cost of any component of capital structure of the company like interest payment on debt is very high then it can increase the overall cost of capital of the company. In such case the company should minimize the use of that component of capital structure in its total capital structure.

vi. **Flotation costs:** It is the cost involved in issuing a security or a debt. If such cost is too high for new issue of any component of capital structure, then the use of such a source of fund should be minimised.

5.7.3 Limitations in designing optimal capital structure

Firms always try to keep its debt equity ratio at such a proportion, which keep cost of capital at its lowest and the value of the firm reaches its maximum. However in reality, reaching the level of optimal capital structure is a difficult task due to several constrains. Following are the main constrains of designing an optimal capital structure:

- In real sense it is difficult to ascertain the optimum capital structure.
- For designing an optimal capital structure one need exact information about the requirement of capital of the firm, availability of different components of capital, cost of capital and rate of return on investment. But, in reality it is not possible to have the exact information of all these parameters.
- Information which is available is for a specific period. Thus, a capital structure designed on the basis of such information will lose all flexibility.
- The real business world is very dynamic with constantly changing demand and supply of various components of capital structure.

Hence, we can say that the optimal capital structure is an ideal situation which is invincible. The idea of optimal capital structure can be use as a benchmark of performance for the firm.

5.8 DETERMINANTS OF CAPITAL STRUCTURE

Determining the optimal capital structure at the time of starting the company is very important. Management of any company should set a target capital structure and the subsequent financing decisions should be made with a view to achieve the target capital structure. The following are the major determinants of capital structure:

i. **Tax benefit of Debt:** Debt is the cheapest source of long-term finance, when compared with other source equity, because the interest on debt

finance is a tax-deductible expense. Hence, debt can be accepted as tax sheltered source of finance, which helps in shareholders' wealth maximization.

ii. **Control:** Equity shareholders have voting right to elect the directors of the company. Raising funds by way of issue of new equity shares to the public may lead to loss of control. If the main objective of management is to maintain control, they will have to prefer debt and preference shares in additional capital requirements. However the company earnings should be such that it is able to repay the debt in time.

iii. **Flexibility:** The capital structure should be determined within the debt capacity of the company, and this capacity should not be exceeded. The debt capacity of a company depends on its ability to generate future cash flows. It should have enough cash to pay the debt obligations. The capital structure should be able to adapt its capital structure with a minimum cost and delay if warranted by a changed situation.

iv. **Industry Standards:** A company needs to examine industry standards of debt-equity mix while planning its capital structure. For example Electrical Industry tries to maintain debt-equity ratio of less than 2:1; Chemical Industry has a conservative debt policy; and in Automobile Industry government permits a debt – equity ratio of 2:1.

v. **Company Size:** Companies that are very small must rely to a considerable degree on the owner's fund for their financing, they find it difficult to obtain long–term debts. Large companies can make use of different sources of funds.



CHECK YOUR PROGRESS

Q 1: What do you mean by Capital Structure?

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Q 2: What are the different features of Capital Structure?

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Q 3: What are the determinants of Capital Structure?

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5.9 THEORIES OF CAPITAL STRUCTURE

In order to identifying the optimum debt-equity mix, it is necessary for the finance manager to be familiar with the basic theories underlying the capital structure of corporate enterprise. There are four major theories/ approaches explaining the relationship among capital structure, cost of capital and value of the firm. They are:

a. Net Income (NI) Approach

b. Net Operating Income (NOI) Approach

c. Modigliani – Miller (MM) Approach

d. Traditional Approach

5.9.1 Net Income (NI) Approach

Net Income approach proposes that there is a definite relationship between capital structure and value of the firm. The capital structure of a firm influences its cost of capital (i.e. weighted average cost of capital), and thus directly affects the value of the firm (Value of the firm = Earnings/ WACC). Higher debt content in the capital structure will result in decline in the overall or weighted average cost of the capital. This will results in increase in the value of the firm and consequently increase in the value of equity shares of the company. Thus, as per NI approach, a firm will have maximum value at a point where WACC is minimum, i.e. when the firm is almost debt-financed.

The NI approach based on the following three assumptions –

- NI approach assumes that a continuous increase in debt does not affect the risk perception of investors.
- Cost of debt (K_d) is less than cost of equity (K_e) [i.e. $K_d < K_e$]
- Corporate income taxes do not exist.

Value of the firm: According to NI approach value of the firm can be ascertained with the help

of following equation-

V=S+B

Where,

V= value of the firm

S = market value of equity: (S=$\frac{NI}{ke}$; NI=earnings available for equity shareholders, ke = equity capitalization rate)

B = market value of debt

5.9.2 Net Operating Income (NOI) approach

Net Operating Income (NOI) approach is the exact opposite of the Net Income (NI) approach. As per NOI approach, any change in the capital structure will not at all effect the market value of the firm i.e. value of a firm is not dependent upon its capital structure.

The NOI approach based on the following three assumptions –

- WACC is always constant and it depends on the business risk.
- Value of the firm is calculated using the overall cost of capital i.e. the WACC only.
- The cost of debt is constant.
- Corporate income taxes do not exist.

Value of the firm: According to NI approach value of the firm can be ascertained with the help

of following equation-

V=$\frac{EBIT}{k}$

Where,

V= value of the firm

k = overall cost of capital

EBIT= earnings before interest and tax

NOI propositions (school of thought)

- The use of higher debt component (borrowing) in the capital structure increases the risk of shareholders.
- Increase in shareholders' risk causes the equity capitalization rate to increase, i.e. higher cost of equity
- A higher cost of equity nullifies the advantages gained due to cheaper cost of debt
- In other words, the finance mix is irrelevant and does not affect the value of the firm.

5.9.3 Modigliani – Miller (MM) Approach

MM approach supports the NOI approach, i.e. the capital structure has no effect on value of a firm. Further, the MM model adds a behavioral justification in favour of the NOI approach . Assumptions–

- Capital markets are perfect and investors are free to buy, sell, & switch between securities. Securities are infinitely divisible.
- Investors can borrow without restrictions at par with the firms.
- Investors are rational & informed of risk-return of all securities
- No corporate income tax and no transaction costs.
- 100 % dividend payout ratio, i.e. no profits retention

MM Model proposition –

- Value of a firm is independent of the capital structure.
- Value of firm is equal to the capitalized value of operating income (i.e. EBIT) by the appropriate rate (i.e. **WACC**).
- Value of Firm = Mkt. Value of Equity + Mkt. Value of Debt

$$= \frac{Expected\ EBIT}{Expected\ WACC}$$

- As per MM, identical firms (except capital structure) will have the same level of earnings.

- As per MM approach, if market values of identical firms are different, 'arbitrage process' will take place.
- In this process, investors will switch their securities between identical firms (from levered firms to un-levered firms) and receive the same returns from both firms.

5.9.4 Traditional approach

The NI approach and NOI approach represent two extreme views on the relationship between capital structure, cost of capital and the value of a firm. According to the NI approach, the debt content in the capital structure affect both the overall cost of capital and total valuation of the firm. While, according to NOI approach capital structure is totally irrelevant so far as total valuation of the firm is concern. The MM approach supports the NOI approach. Traditional approach is a compromise between these two extreme approaches. Traditional approach confirms the existence of an optimal capital structure; where WACC is minimum and value is the firm is maximum. As per this approach, a best possible mix of debt and equity will maximize the value of the firm.

The approach works in 3 stages –

1) Value of the firm increases with an increase in borrowings (since Cost of debt < cost of equity). As a result, the WACC reduces gradually. This phenomenon is up to a certain point.
2) At the end of this phenomenon, reduction in WACC ceases and it tends to stabilize. Further increase in borrowings will not affect WACC and the value of firm will also stagnate.
3) Increase in debt beyond this point increases shareholders' risk and hence cost of equity increases. Cost of debt also rises due to higher debt, WACC increases & value of firm decreases.



CHECK YOUR PROGRESS

Q 4: What are the theories of Capital Structure?

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LET US KNOW

The present D/E ratio of major Indian Industries

Debt- Equity Ratios

Industries	2007-08	2006-07	2005-06
Automobiles	0.47	0.42	0.38
Cement	0.64	0.81	1.13
Construction	0.91	1.32	1.29
Pharma	0.64	0.69	0.74
Steel	0.89	0.96	0.99
Telecom	0.68	0.63	0.32
Textiles	1.66	1.46	1.25

5.10 FACTORS TO BE CONSIDERED WHILE DETERMINING CAPITAL STRUCTURE

A company can raise finance through both equity and debt. Normally company wishes to include both equity and debt in the capital structure. Determining the capital structure is not an easy task. While determining the capital structure of a firm, following points need to be considered.

- **Strategy:** The financial structure of a company is primarily determined by its overall strategy. Future course of action and future planning need consideration before finalizing the capital structure. Other strategic factors like management control level, risk averseness or risk taking nature of the management have to be considered. The most appropriate capital structure is that one, which closely support the strategic decisions and future course of action of the business.

- **Nature of business:** Nature of business of the company or firm plays an important role in capital structure decision. A capital intensive firm will mostly rely on debt capital. Nature of business determines the volume of current asset and fixed asset. A firm with trading business requires more current assets than fixed assets. Similarly, business associated with construction and higher consumer goods requires more fixed asset with current assets. Structure of asset holding influence the capital structure of the firm.
- **Current and past capital structure:** Past decisions of a firm heavily influence its capital structure. For example, past decisions regarding investment, takeover, dividend etc. plays an important role in determining present capital structure. Likewise present change in the capital structure decides the future capital structure.

5.11 APPROACHES TO DETERMINE APPROPRIATE CAPITAL STRUCTURE

The following are the approaches to determine a company's capital structure:

(i) EBIT – EPS Analysis: It analyses how alternative capital structures influence the earnings per share.

(ii) ROI- ROE Analysis: It analyses how alternative capital structures influence the return on equity (ROE).

5.11.1 EBIT-EPS Analysis

The use of financial leverage i.e. use of debt capital has two effects on the earnings that go to the company's equity shareholders: (i) an increased risk in earnings per share (EPS) due to the use of fixed financial obligations and (ii) a change in the level of EPS at a given EBIT associated with a specific capital structure.

The first effect is measured by the degree of financial leverage which has been discussed in Unit 9 (Leverage). The second effect is analyzed by means of EBIT-EPS analysis.

It will examine how sensitive is Earnings per Share (EPS) to the changes in Earnings before Interest and Tax (EBIT) under different capital structure. It is known as EBIT- EPS analysis. The benefits are more when a company uses debt as a source of finance, due to cheap and interest is tax deductible source. Use of debt can be used to maximize shareholders wealth only when a company has high level of operating profit (EBIT). EBIT-EPS analysis is one way to study the relation between earnings per share (EPS) and various possible levels of operating profit (EBIT), under various plans.

This analysis is a practical tool that enables the financial manager to evaluate alternative financing plans by investigating their effect on EPS over a range of EBIT levels. Its primary objective is to determine the EBIT break – even point among the various alternative financing plans.



Exercise 1 :

FTS Ltd. has 10,00,000 of equity shares of Rs 10 each. The company falls in 50 per cent tax bracket. FTS plans to raise additional capital of Rs 100, 00,000 for financing an expansion project. In this context, it is evaluating two alternative financing plans: (i) issue of equity shares (10, 00,000 shares at Rs 10 per share), and (ii) issue of debentures carrying 14 percent interest. What will be EPS under two alternative financing plans for two levels of EBIT, say Rs 40, 00,000 and Rs 20, 00,000?

Solution 1:

Here present equity shares:	10, 00,000
Additional equity shares:	10, 00,000
Total equity shares under (under equity plan):	20, 00,000
Total equity shares under (under debt plan):	10, 00,000

Earnings per share = $\frac{Pat}{Number\ of\ equity\ shares}$

Earnings per share under Alternative Financing Plans

	Equity financing		Debt financing	
EBIT (Rs)	20,00,000	40,00,000	20,00,000	40,00,000
Interest	_____	_____	14,00,000	14,00,000
Profit before taxes(PBT)	20,00,000	40,00,000	6,00,000	26,00,000
Taxes at 50%	10,00,000	20,00,000	3,00,000	13,00,000
Profit after tax (PAT)	10,00,000	20,00,000	3,00,000	13,00,000
	Equity financing		**Debt financing**	
Number of equity shares	20, 00,000	20, 00,000	10, 00,000	10, 00,000
Earnings per share	0.50	1.00	0.30	1.30

Interpretation:

(i) EPS under debt financing is high i.e 1.3 when earnings are high i.e Rs 40, 00,000. But when earnings fall to Rs 20, 00,000 then EPS is at its lowest 0.3.

(ii) Leveraging impact is not there with sole equity financing but the risk of having low EPS is not there even with fall in earnings.

5.11.2 ROI-ROE Analysis

It examines at the relationship between the return on investment (ROI) and the return on equity (ROE) for different levels of financial leverage. The influence of ROI and financial leverage on ROE is mathematically as follows:

$ROE = [ROI + (ROI - r) D/E] (1-t)$

Where, ROE = return on equity

ROI = return on investment

r = cost of debt

D/E = debt-equity ratio

t = tax rate

Exercise 2:



Kodak Ltd. has a debt-equity (D/E) ratio of 1, cost of debt = 10 percent and has tax rate of 50%.

(i) Calculate the value of ROE for two values of ROI, namely 15 percent and 20 percent.

(ii) It now wants to raise its debt- equity (D/ E) to 1.5. Calculate the value of ROE for two values, namely 15 percent and 20 percent when ROI is 12 percent and 15 percent .

Solution 2:

(i) When D/E = 1, r = 10 %, t = 50% and ROI = 15 %

ROE = [15 + (15-10)1] (1-0.5) = 10.0 %

When ROI = 20 %

ROE = [20 + (20 -10)1] (1-0.5) = 15.0 %

(ii) When D/E = 1.5, r = 10 %, t= 50% and ROI = 12%

ROE = [12 + (12 -10)1.5](1-0.5) = 7.5 %

When ROI = 15%

ROE = [15 + (15 – 10)1.5] (1-0.5) = 11.25 %

D/E	ROI (%)	ROE (%)
1	15	10
1	20	15
1.5	12	7.5
1.5	15	11.25

(i) It can be seen from above that with D/E remaining 1, ROE increases with ROI.

(ii) However, when D/E increase to 1.5 and ROI falls to 12 % than ROE becomes 7.5 % which is less than the cost of debt of 10%. ROE is marginally high than cost of capital of 10 % when ROI is 15 %.



5.12 LET US SUM UP

- Capital structure is that part of financial structure, which represents long-term sources.
- The term capital structure is generally taken as the mix of long – term sources of funds, such as equity shares, reserves and surpluses, preference share capital, debenture and long-term loan.
- Optimum capital structure is that capital structure at that level of debt-equity proportion where the market value per share maximizes and the cost of capital minimizes.
- The major determinants of capital structure are tax benefit of debt, control, flexibility, industry standards and company size.
- The two main approaches to determine a company's capital structure are (i) EBIT – EPS Analysis and (ii) ROI- ROE Analysis.
- There are four major theories/approaches explaining the relationship among capital structure, cost of capital and value of the firm. They are: Net Income (NI) Approach, Net Operating, Income (NOI) Approach, Modigliani – Miller (MM) Approach, Traditional Approach.



5.13 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition

5.14 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: Capital structure is that part of financial structure, which represents long-term sources.

Ans to Q.2: Profitability, Flexibility, Solvency, Control, Cost of Capital, Flotation costs.

Ans to Q.3: Tax benefit of Debt, Control, Flexibility, Industry Standards, Company size.

Ans to Q.4: They are: Net Income (NI) Approach, Net Operating Income (NOI) Approach, Modigliani – Miller (MM) Approach, Traditional Approach

5.15 MODEL QUESTIONS

Q1: What the importance of capital structure decision?

Q2: What is optimum capital structure? Write three important features of an appropriate capital structure.

Q3: Discuss different theories of capital structure.

Q4: Explain the major determinants of capital structure.

Q5: Why is EBIT-EPS and ROI-ROE analysis so important?

UNIT 6: COST OF CAPITAL

UNIT STRUCTURE

6.1 Learning Objectives

6.2 Introduction

6.3 Concept of Cost of Capital

6.4 Significance of Cost of Capital

6.5 Classification of Cost of Capital

6.6 Determination of Specific Cost

6.7 Weighted Average Cost of Capital

6.8 Let Us Sum Up

6.9 Further Reading

6.10 Answers To Check Your Progress

6.11 Model Questions

6.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- explain the concept of cost of capital
- discuss the significance of cost of capital
- describe the classifications of cost of capital
- outline the determination of specific cost
- discuss weighted average cost of capital

6.2 INTRODUCTION

In this unit we are going to discuss the concept of cost of capital. We will be discussing on the significance, classification of cost of capital. Again we will get an idea on the determination of specific cost and weighted average cost of capital. The items on the financing side of the balance sheet are called capital components. The major capital components are equity, preference, and debt and term loan. All these sources of capital have a cost. A company's cost of capital is the average cost of the various capital components employed by it. In other words, it is the average

rate of return required by the investors who provide capital to the company. It refers to the minimum rate of return a company must earn on its investment so that the market value of the company's equity share may not fall. In the words of Hampton, John J, "cost of capital is the rate of return the company requires from investment in order to increase the value of the company in the market place".

6.3 CONCEPT OF COST OF CAPITAL

The cost of capital is an important concept in formulating a company's capital structure. Two major schools of thought have emerged having basic difference on the relevance of cost of capital. Modigliani Miller argued that a company's cost of capital is constant and it is independent of the method and level of financing. Whereas some analysts hold that cost of capital is varying and dependent on capital structure.

Some definitions are as follows:

Cost of capital is the rate of return of the capital funds used in the company. Cost of capital for a firm may be defined as the cost of obtaining funds i.e. the average rate of return that the investors in a firm would except for supplying finds to the firm.

According to Solomon Ezra, "The cost of capital is the minimum required rate of earnings or the cut off rate for capital expenditure."

In the words of Haley and Schall, in a general sense, "Cost of capital is any discount rate used to value cash streams."

6.4 SIGNIFICANCE OF COST OF CAPITAL

The concept of cost of capital is very important and it is useful in the following financial management decisions.

(i) **Capital budgeting decisions***:* In capital budgeting decisions, the cost of capital is often used as a discount rate on the basis of which the company's future cash flows are discounted to find out their present values. Thus, the cost of capital is the very basis for financial appraisal of new capital expenditure proposals. The decision of the

finance manager will be irrational and wrong in case the cost of capital is not correctly determined. This is because the business must earn at least at a rate which equals to its cost of capital in order to break-even.

(ii) **Capital structure decisions***:* The cost of capital is also an important consideration in capital structure decisions. The finance manager must raise capital from different sources in a way that it optimizes the risk and cost factors. The sources of funds which have less cost involve high risk. Raising of loans may, therefore, be cheaper on account of income tax benefits, but it involves heavy risk because a slight fall in the earning capacity of the company may bring the company near to cash insolvency. It is, therefore, absolutely necessary that cost of each source of funds is carefully estimated and compared with the risk involved with it.

(iii) **Financial Performance Appraisal**: Cost of capital framework can be used to evaluate the financial performance of top management.

6.5 CLASSIFICATION OF COST OF CAPITAL

Cost of capital can be brought as under:

- Explicit Cost
- Implicit Cost
- Specific Cost
- Average Cost
- Marginal Cost
- **Explicit Cost:** The explicit cost of any source of finance may be defined as the discount rate that equates the present value of the cash inflows with the present value of its expected cash outflows. When a company raises funds from different sources, it involves only a cash inflow at the beginning by the amount raised which is followed by a series of cash outflows in the form of interest payments, repayment of principal or repayment of dividends. The explicit cost may be defined as the internal rate of return the company pays for different financing. The explicit cost of capital may be computed by using the following equation:

$$I_o = \frac{C_1}{(1+k)^1} + \frac{C_2}{(1+k)^2} + \cdots\cdots + \frac{Cn}{(1+k)^n}$$

Where I_o = Net amounts of funds received by the company at time zero.

C = Outflow in the period concerned

n = Period for which the funds are provided

k= Explicit Cost of Capital

- **Implicit Cost:** The implicit cost may be defined as the rate of return associated with the best investments opportunity for the company, its shareholders and creditors that will be foregone for investing in that company. When the earnings are retained by a company, the implicit cost is the income which the shareholders could have earned if such earnings would have been distributed and invested by them.
- **Specific Cost:** The cost of each component of capital, i.e equity shares, preference shares, debentures, term loan etc is called the specific cost of capital.
- **Average Cost or Weighted Average Cost:** The combined cost of all sources of capital is called average or overall cost of capital. The component costs are combined according to the weight of each component capital to obtain the average cost of capital. Thus, the overall cost is also called the weighted average cost of capital (WACC).
- **Marginal Cost:** Marginal cost of capital is the cost of additional amount of capital which is raised by a company for current and fixed capital investment. In other words , marginal cost is the new or the incremental cost that the company incurs if it were to raise capital at present or in the near future.



CHECK YOUR PROGRESS

Q1. What do you mean by cost of capital?

.....

.....

Q2. Write down two different types of cost.

.....

.....

.....

6.6 DETERMINATION OF SPECIFIC COST

A. COST OF DEBT:

Companies raise debt capital through issue of debentures or raise loan from financial institution or deposits from public. All these funds need a specific rate of interest to be paid. Again, the interest payments made on debt issue qualify for tax deduction. Computation of cost of debt capital depends on the maturity, interest rate and tax rate.

B. COST OF IRREDEEMABLE DEBT:

Cost of perpetual debt is the rate of return that lender expects, i.e. fixed interest rate. Debentures may be issued at (i) par or face value, (ii) discount and (iii) premium. The following formulae used to compute cost of debentures:

(i) Pre-tax Cost: $$K_d = \frac{\text{Interest}}{\text{Principal amount or face value}}$$

(ii) Post-tax Cost: $$K_d = \frac{\text{Interest (1- tax rate)}}{\text{Principal amount or face value}}$$



Exercise: 1

Alfa Ltd. decides to issue perpetual debt at 12 percent with a face value of Rs.100 each. The company is in 40 per cent tax bracket. Calculate cost of debenture.

Solution:

(i) Pre-tax Cost

Here interest = 0.12 X Rs 100 = Rs 12

Face value = Rs 100

$$K_d = \frac{\text{Rs 12}}{\text{Rs 100}} = 12 \text{ percent}$$

(ii) Post –tax Cost

Here interest = 0.12 X Rs 100 = Rs 12

Face value = Rs 100

Tax rate = 40 percent

$K_d = \frac{\text{Rs 12 (1- 0.40)}}{\text{Rs 100}} = 7.2$ percent



Exercise: 2

A company issues 10 percent debentures for Rs 1,00,000. Rate of tax is 50 percent. Calculate the cost of debt (post –tax) if the debentures are issued at (i) par (ii) 10 % discount and (iii) 10 % premium.

Solution:

Post-tax Cost: $K_d = \frac{\text{Interest (1- tax rate)}}{\text{Principal amount or face value}}$

(i) Issued at par : Here interest = 0.10 X Rs1,00,000 = Rs 10,000

Principal amount = Rs 1, 00,000

Tax rate = 50 percent

$K_d = \frac{\text{Rs 10,000 (1-.50)}}{\text{Rs 1, 00,000}} = 0.05 = 5$ percent

(ii) Issued at 10% discount

Here interest = 0.10 X Rs1, 00,000 = Rs 10,000

Principal amount (at 10 % discount) = Rs 1, 00,000 – Rs 10,000

= Rs 90,000

$K_d = \frac{\text{Rs 10,000 (1-.50)}}{\text{Rs 90,000}} = 0.055 = 5.5$ percent

(iii) Issued at 10 % premium

Here interest = 0.10 X Rs1, 00,000 = Rs 10,000

Principal amount (at 10 % premium) = Rs 1, 00,000 + Rs 10,000

= Rs 110,000

$K_d = \frac{\text{Rs 10,000 (1-.50)}}{\text{Rs 110,000}} = 0.045 = 4.5$ percent

C. COST OF REDEEMABLE DEBT

Redeemable debentures are those having a maturity period or repayable after a certain given period of time. When debentures are redeemed after the expiry of a fixed period, the cost of debt (pre tax) can be computed with the help of the following formula:

(i) Cost of debt (pre tax)

$$K_d = \frac{I + (D-P)/n}{(D+P)/2}$$

Where I = Annual Interest

D = Par value of debentures

n = Number of years to maturity

P = Net proceeds

(ii) Cost of debt (post tax)

The cost of debt (post tax) can be computed as follows:

K_d (post tax) = K_d (pre tax) X (1- tax rate)

Illustration: A company issues 10 % debentures for Rs 1, 00,000 and realises Rs 95,000 after 5 % commission to brokers. The debentures are due for maturity at the end of the 10 th year. Compute the effective cost of debt (pre tax).

Solution:

$$K_d = \frac{I + (D-P)/n}{(D+P)/2}$$

Where,

I = Rs. 10,000(10% of Rs. 1, 00,000)

P= Rs. 95,000

D=Rs. 1, 00,000

n=10

$$K_d = \frac{10,000+ (100,000-95,000)}{10}$$

$$\frac{\frac{100{,}000 + 95000}{2}}{97{,}500} = \frac{10{,}000 + 500}{97{,}500} = 10.77\%$$

D. COST OF PREFERENCE CAPITAL:

The cost of preference share capital is a function of the dividend expected by the investors. Though dividend payment is not obligatory, it is expected that companies should pay dividend regularly except when the companies do not make profits. The cost of redeemable and irredeemable preference shares are given below.

Cost of Irredeemable Preference Share

(i) $K_p = \frac{\text{Dividend } (D_p)}{\text{Net proceeds (NP)}}$



Exercise: 3

HLL Ltd. issues 12 per cent irredeemable share of face value of Rs 200 each. Compute cost of preference share.

Solution:

Here Dp = 0.12 X Rs 200 = Rs 24

Net proceeds (NP) = Rs 200

$$K_p = \frac{Dp}{NP} = \frac{24}{200} = 0.12 \text{ or } 12\ \%$$



Exercise: 4

SRT Ltd. is planning to issue irredeemable preference share at 16 percent. The face value of each preference share will be Rs 100. The floatation costs are estimated at 3 percent. Compute cost of preference shares if these are issued at (i) face value, (ii) 10 percent premium and (iii) 5 percent discount.

Solution:

(i) Here, Face value of preference share = Rs 100

Floatation cost = 0.03 X Rs100 = Rs 3

Net proceeds = Rs 100 – Rs 3 = Rs 97

Dividend = 0.16 X Rs 100 = Rs 16

$$K_p = \frac{D_p}{NP} = \frac{Rs\ 16}{Rs\ 97} = 0.164 \text{ or } 16.4\ \%$$

(ii) Here, Face value of preference share = Rs 100

10% premium on face value = Rs 0.10 X 100 = Rs 10

Face value with 10% premium = Rs 100 + Rs 10 = Rs 110

Floatation cost = 0.03 X Rs100 = Rs 3

Net proceeds = Rs 110 – Rs 3 = Rs 107

Dividend = 0.16 X Rs 100 = Rs 16

$$K_p = \frac{D_p}{NP} = \frac{Rs\ 16}{Rs\ 107} = 0.149 \text{ or } 14.9\ \%$$

(iii) Here Face value of preference share = Rs 100

5% of discount on face value = Rs 0.05 X 100 = Rs 5

Face value with 5% of discount = Rs 100 – Rs 5 = Rs 95

Floatation cost = 0.03 X Rs100 = Rs 3

Net proceeds = Rs 95 – Rs 3 = Rs 92

Dividend = 0.16 X Rs 100 = Rs 16

$$K_p = \frac{D_p}{NP} = \frac{Rs\ 16}{Rs\ 92} = 0.173 \text{ or } 17.3\ \%$$

E. COST OF REDEEMABLE PREFERENCE SHARE:

Shares that are issued for a specific maturity period are known as redeemable preference shares. Cost of preference share is the discount rate that equates the present value of cash inflows (net proceeds) with the present value of cash outflows (dividend and principal repayment). Generally dividend is paid at the end of every year, but principal amount will be paid at the end. Cost of preference share when the principal amount is paid

at the end is given below.

$$NP = \frac{D_1}{(1+K_p)^1} + \frac{D_2}{(1+K_p)^2} + \ldots\ldots\ldots\ldots\ldots + \frac{D_n}{(1+K_p)^n} + \frac{P_n}{(1+K_p)^n}$$

Where K_p= Cost of preference share

NP= Net proceeds after discount, floatation cost

D_i = Dividend on preference share at the end of year i , i = 1,2,….,n

P_n = Repayment of principal amount at the end of year 'n' years.

This equation can be simplified and written as the following:

$$Kp = \frac{C + (D-P)/n}{(D+P)/2}$$

Where, C = Annual dividend

D= Par value of preference shares

n = Number of years to maturity

P = Net Proceeds

F. COST OF EQUITY CAPITAL:

Cost of this source of capital is very difficult to measure. The difficulty arises from two factors: First it is very difficult to estimate the expected dividends. Second, the future earnings and dividends are expected to grow over time. Growth in dividends should be estimated and incorporated in the computation of the cost of equity. The dividend valuation method is discussed below.

Dividend Valuation Method

According to this method, the cost of equity capital is that discount rate which equates the current market price of the equity (P) with the sum of present value of expected dividends. That is,

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

Where D_1, D_2 ..... are dividends expected during each time period (1, 2,…,n) and K_e is the cost of equity or the discount rate. The above equation

can be simplified and written as the following:

$$K_e = \frac{D}{P}$$

Where D = dividend at the end of year, P = Current market price of share or Net proceeds per share.

However dividends are expected to grow over years. In order to overcome this problem, a constant growth rate (g) in dividend has to be assumed. Then the cost of equity can be obtained by the following formula:

$$Ke = \frac{D_1}{P} + g$$

Where $D_1 = D(1+g)$ = dividend a year hence growing at 'g' rate;

P = Current market price of share or net proceeds per share;

g= growth in dividend.



Exercise: 5

SFL Ltd. offers equity shares of Rs 10 each for public subscription. The rate of dividend expected by equity shareholders is 30%. What will be the cost of equity if the present market price of SFL share is Rs 13?

Solution

Here D = Dividend amount = 0.30 X Rs 10 = Rs 3

P = Current market price = Rs 13

$$K_e = \frac{Rs\ 3}{Rs\ 13} = 0.23 \text{ or } 23\ \%$$



Exercise: 6

The current market price of equity of an equity share of ACC Ltd is Rs 540. The current dividend per share is Rs 15. Dividends are expected to grow at 7 %. Calculate the cost of equity.

Solution:

Here, D = Dividend amount = Rs1 5

D1 =Rs 15 (1 + 0.07) = Rs 16.05

P = Current market price = Rs 540

g = Growth rate in dividend = 7 %

$$K_e = \frac{16.05}{540} + 0.07 = 0.099 \text{ or } 9.9\ \%$$

G. COST OF RETAINED EARNINGS:

The part of income which is left with after paying interest on debt capital and dividend to its shareholders is called retained earnings. These also involve cost in the sense that by withholding the distribution of part of income to shareholders the company is denying them the opportunity to invest these funds elsewhere and earn income. In this sense the cost of retained earnings is the opportunity cost. In other words, the opportunity costs of retained earnings are the earnings foregone by the shareholders. However, the following adjustments are required for determining the cost of retained earnings:

(i) Income Tax Adjustment: Usually, the dividends receivable by the shareholders are subject to income tax. Thus the dividends actually received by them are the amount of net dividend (i.e. gross dividends less income tax)

(ii) Brokerage Cost Adjustment: Usually, the shareholders cannot utilize the amount of dividend received from the company for the purpose of investment as they have to incur some expenses by way of brokerage, commission etc for purchasing new shares against the dividend.

The cost of retained earnings after making proper adjustments (i.e. income tax, brokerage cost) can be computed by using the following formula:

$$K_r = K_e (1- T) (1-C)$$

Where K_r = Cost of retained earnings

Ke = Cost of Equity Capital

T = Tax rate applicable to the shareholders

C = Commission and Brokerage costs, etc.

6.7 WEIGHTED AVERAGE COST OF CAPITAL

The term cost of capital is used to denote the overall composite of capital or weighted average of the cost of each specific type of funds i.e weighted average cost. The weighted average cost of capital implies an average of the costs of each of the source of funds employed by the company properly weighted by the proportion they hold in the company's capital structure. The computation of weighted average cost of capital involves the following steps:

(i) Calculate the cost of each specific source of funds.

(ii) Assign proper weights to specific costs.

(iii) Multiply the cost of each source by the appropriate weight.

(iv) Divide the total weighted cost by the total weights to get the overall cost of capital.

Assignments of weights

The weights to specific funds may be assigned based on the following:

(i) Book values: Book value weights are based on the values found on the balance sheet. The weight applicable to a given source of fund is simply the book value of the source of fund divided by the book value of total weights.

(ii) Market values: Under this method, assigned weights to a particular component of capital structure is equal to the market value of the component of capital divided by the market value of all components of capital and capital employed by the company.

For example, let us assume that the proposed capital structure of a company after new financing would be as follows:

Equity capital	...	25 Percent
Debt capital	...	50 Percent
Preference capital	...	10 Percent
Retained earnings	...	15 Percent
Total		100 %

Suppose the company has calculated the cost of each source of capital as follows:

Item	...	Cost
Equity Capital	...	24 Percent
Debt capital	...	8 percent
Preference capital	...	23 Percent
Retained earnings	...	19 Percent

With these figures, the weighted average cost of capital is calculated for the company as shown in the following table.

Types of capital	Proportion in the New capital structure (W)	Cost of capital (X)	(WX) (2 x 3)
1	**2**	**3**	**4**
Equity capital	25	24	600
Debt capital	50	8	400
Preference capital	10	23	230
Retained earnings	15	19	285
	100		**1515**

The formula for the weighted cost of capital is:

$$WX / W = 1515/ 100$$

$$= 15.15\ \%$$

This average cost of capital provides a measure of the minimum rate of return which the proposed investment must earn to become acceptable.

Exercise: 7

The specific cost components (post tax) of E-net Ltd. are given below:

Cost of debt	4.00 %
Cost of preference shares	11.5 %
Cost of equity capital	15.50 %
Cost of retained earnings	14.50%

The capital structure of E-net is the following:

Sources	**Amount (Rs)**
Debt	3,00,000
Preference Share Capital	4,00,000
Equity Share Capital	6,00,000
Retained Earnings	2,00,000
	15, 00,000

Calculate the weighted average cost of capital using 'Book Value Weights'.

Computation of Weighted Average Cost of Capital under Book Value Weights

Sources (a)	Amount(Rs) (b)	Proportion (c)	Post tax cost (d)	Weighted Cost (e)=(c) X (d)
Debt	3,00,000	3, 00,000 = 0.200 15,00,000	0.04	0.200X0.040 = 0.0080
Preference shares capital	4,00,000	4,00,000 = 0.267 15,00,000	0.115	0.267X 0.115 = 0.0307
Equity share capital	6,00,000	6,00,000 = 0.400 15,00,000	0.155	0.400X 0.155 = 0.0620
Retained earnings	2,00,000	2,00,000 = 0.133 15,00,000	0.145	0.133X 0.145 = 0.0193
Total	15,00,000			0.1200

Therefore, weighted average cost of capital is 12 %.



CHECK YOUR PROGRESS

Q3: Fill in the blanks with appropriate words :

i. Cost of capital is the ……required rate of return expected by investors.

ii. The explicit cost is the …… which equates the present value of cash inflows with present value of cash outflows.

iii. …… is the cost associated with particular component at capital structure.

iv. ……. is the additional cost incurred to obtain additional funds required by a company.

v. An average of the cost of each source of funds employed by the company for capital formation is called as ……

Q4: Ajax Ltd. has made an issue of debentures for Rs 400 lakhs. The terms of the issue are as follows: each debenture has a face value of Rs 100 and carries a rate of interest of 14 per cent. The interest is payable annually and the debenture is redeemable at a premium of 5 per cent after 10 years. If Ajax realizes Rs 97 per debenture and the corporate tax rate is 50 per cent, what is the cost of the debenture to the company?

.....

.....

Q5: The market price per share of MDH Ltd. is Rs 125. The dividend per share expected a year hence is Rs 12 per share and dividend per share is expected to grow at a constant rate of 8 per cent per annum. What is the cost of the equity capital?

.....

.....



6.8 LET US SUM UP

In this unit we have discussed the following:

- Cost of capital refers to the minimum rate of return a company must earn on its investments in order to satisfy the various categories of investors who have made investments in the form of shares, debentures or term loans.
- The determination of cost of capital is very significant from the point of view of (i) Capital Budgeting Decisions (ii) Capital Structure Decisions and (iii) Financial Performance.
- Cost of capital can be broadly classified as Explicit cost, Specific cost , Average cost and Marginal cost.

- Cost of irredeemable debt is calculated as

$$\text{Pre-tax Cost: } K_d = \frac{\text{Interest}}{\text{Principal amount or face value}}$$

$$\text{Post-tax Cost: } K_d = \frac{\text{Interest (1-tax rate)}}{\text{Principal amount or face value}}$$

- Cost of redeemable debt

$$\text{Pre – tax Cost: } K_d = \frac{I + (D-P)/n}{(D+P)/2}$$

Post – tax Cost $K_d = K_d$ (pre tax) X (1- tax rate)

- Cost of Irredeemable Preference Share

$$K_p = \frac{\text{Dividend } (D_2)}{\text{Net proceeds (NP)}}$$

- Cost of redeemable preference shares

$$Kp = \frac{C + (D-P)/n}{(D+P)/2}$$

- Cost of equity capital can be calculated as the following

$$Ke = \frac{D_1}{P} + g$$

- Cost of retained earnings

$K_r = K_e$ (1- T) (1-C)

- The weighted average cost of capital implies an average of the costs of each of the source of funds employed by the company properly weighted by the proportion they hold in the company's capital structure.

6.9 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition

6.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: Cost of capital is the rate of return the capital funds used should produce to justify their use within the company.

Ans to Q.2: Explicit Cost and Implict Cost.

Ans to Q.3: i. Minimum, ii. Discount rate, iii. Specific, iv. Marginal cost, v. Weighted average cost of capital.

Ans to Q.4: 7.7 per cent (Hint: Interest = Rs 14, Tax rate= 0.5, Net proceed = Rs 97 and number of years = 10)

Ans to Q.5: 18.4 per cent (Hint : Dividend = Rs 12.96 , growth rate= 0.08 and current market price = Rs 125]

6.11 MODEL QUESTIONS

Q1. State the importance of cost of capital. How is component cost of capital calculated?

Q2. How is cost of (i) debt capital (ii) preference share and (iii) equity share calculated?

Q3. What are the steps involved in calculation of overall cost of capital?

Q4. The XYZ Company is expected to grow at 9% p.a. Its market price per share is Rs 40. The company pays a dividend of Rs 3.6 per share. What is the cost of equity?

Q5. The Indian Plastic Ltd has on its books the following amounts and specific after-tax current costs for each type capital.

Types of capital	**Book Value**	**Cost of capital**
Long- term debt	700000	4.5%
Preference share	50000	6 %
Equity share	600000	10%

Calculate the weighted average cost of capital of the firm.

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UNIT 7: LEVERAGE

UNIT STRUCTURE

7.1 Learning Objectives

7.2 Introduction

7.3 Meaning of leverage

7.4 Financial Leverage

- 7.4.1 Measure of Financial Leverage
- 7.4.2 Degree of Financial Leverage
- 7.4.3 Impact of Financial Leverage on Investor's Rate of Return

7.5 Operating Leverage

7.6 Degrees of Operating Leverage

7.7 Combined effect of Financial and Operating Leverage

7.8 Let Us Sum Up

7.9 Further Reading

7.10 Answers To Check Your Progress

7.11 Model Questions

7.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- define financial leverage
- explain operating leverage
- describe measurement of operating and financial leveraging
- explain combined effect of operating and financial leveraging

7.2 INTRODUCTION

This unit explains about leverage. It aims to provide us the information about financial leverage, its measures and degree of financial leverage. We will also discuss on the impact of financial leverage on Investor's rate of return. And at the end of this unit we will discuss about operating leverage, degrees of operating leverage and after that we will discuss the combined effect of financial and operating leverage.

7.3 MEANING OF LEVERAGE

Leverage is the existence of fixed costs among a company's cost. These fixed costs can be classified as:

- Those elements of operating expenses which are fixed in nature , and
- Those non-operating expenses, such as interest payments, which are relatively fixed in nature.

The first, namely fixed operating expenses, determine a company's operating leverage and the second, namely fixed financial expenses, determine a company's financial leverage. Operating leverage arises from fixed operating costs (fixed costs other than financing costs), such as depreciation, salaries, advertising expenditures, and taxes. Financial leverage stems from the presence of fixed financing costs such as interest.

7.4 FINANCIAL LEVERAGE

Financial leverage relates to the financing activities of a company. The sources from which funds can be raised by a company can be those which carry a fixed financial charge or cost and those which do not involve any fixed charge. The sources of funds in the first category consist of various types of long-term debt, including debentures and bonds and preference shares. The second source mainly consists of equity capital. Long- term debts carry fixed rate of interest which is a contractual obligation. The dividend on preference shares is not a contractual obligation but is a fixed charge which must be paid before anything is paid to the equity shareholders.

The use of the fixed- charges sources of funds, such as debt and preference capital along with the owners' capital is described as financial leverage. It is also commonly referred as trading on equity. This is because the financial leverage employed by a company is intended to earn more return on the fixed-charge funds than their costs. This is expected to earn more return to the shareholders. However, it is based on the assumption that the company earns more on the assets that are acquired by funds having fixed cost.

Favourable or positive leverage occurs only when the company earns more than the fixed cost. However, unfavourable or negative leverage occurs when the company does not earn as much as the cost of funds. Therefore, in situations when the earnings of the company is depressed, financial leverage may bring risk to the company. This is because the company has to pay interest even when its earnings are declining. This is also referred to as financial risk.

7.4.1 Measures of Financial Leverage

The most common measures of financial leverage are the followings:

i. **Debt Ratio:** It is the ratio of debt to the total available funds of the company, i.e. sum of owner's equity and outside debt. The owner's equity can be measured in terms of either book value or the market value.

It is calculated as **D / D +E**

= D / V

Where D is the value of debt, E is the value of shareholders' equity and V is the value of total capital (i.e. D + E). D and E may be measured in terms of book value.

ii. **Debt Equity Ratio:** It is the ratio of debt to the total equity. Here too, the equity can be measured in terms of either book value or the market value.

It is calculated as **D/E**, where D is the value of debt and E is the shareholders' equity. The book value of equity is called net worth. Shareholder's equity may be measured in terms of market value.

iii **Interest Coverage**: It is the ratio of earnings before interest and taxes (EBIT) to the interest liability. This is known as coverage ratio i.e. debt coverage ratio or debt service coverage ratio.

It is calculated as $\frac{\textbf{Earnings Before Interest and Taxes (EBIT)}}{\textbf{Interest}}$

The first two measures of financial leverage are also known as measures of capital gearing. These measures show the borrowing position of the company at a point of time. The third measure, known as coverage ratio, indicates the capacity of the company to meet fixed financial charges. This measure helps to indicate the financial risk of the company.

7.4.2 Degree of Financial Leverage

The degree of financial leverage (DFL) is defined as the percentage change in earnings per share [EPS] that results from a given percentage change in earnings before interest and taxes (EBIT) and it is calculated as follows.

DFL = Percentage change in EPS divided by Percentage change in EBIT

This calculation produces an index number which if, for example, it is 1.43, this means that a 100 percent increase in EBIT would result in a 143 percent increase in earnings per share. When the economic conditions are good and the company's Earnings before interest and tax are increasing, its EPS increases faster.

The degree of financial leverage is expressed as the percentage change in EPS due to a given percentage change in EBIT.

$$\text{DFL} = \frac{\text{\% change in EPS}}{\text{\% change in EBIT}}$$

Financial leverage on the one hand increases shareholders' return and on the other, it also increases their risk. For a given level of EBIT, EPS varies more with more debt. Thus financial leverage is a double edged weapon. It may assure a higher return but with a higher risk. Normally, a trade off between the return and risk will be arrived at to determine the appropriate amount of debt.

7.4.3 Impact of Financial Leverage on Investor's Rate of Return

Let us understand how financial leverage affects investor's return on equity by the following illustration. A company needs a capital of Rs 10,000 to operate. This fund may be brought by the shareholders of the company. Alternatively, a part of this amount may be brought in through debt financing. If the company has money only from the shareholders than the company is not financially leveraged and would have the following balance sheet.

Liabilities	Rs	Assets	Rs
Equity Capital	10,000	Cash	10,000

The company starts operations and has the following simplified version of income statement :

Sales (Rs)	10,000
Expenses(Rs)	7,000
EBIT(Rs)	3,000
Tax @ 50 %	1,500
Net Profit	1,500

We know calculate the return on equity (ROE):

$$\text{ROE} = \frac{\text{Net Profit}}{\text{Equity Capital}}$$

$$= \frac{\text{Rs 1500}}{\text{Rs 10000}} = 15\%$$

Now, if the company takes debt at the ratio of 2:1 then the return on equity will change. Assuming that the company borrows **10,000 X 2 /3 = Rs 6667** at the rate of 15 %, the balance sheet of the company will be as follows:

Liabilities	Rs	Assets	Rs
Equity Capital	3,333	Cash	10,000
Debt Capital	6,667		
Total	10,000	Total	10,000

The income statement will be now as follows:

	Rs.
Sales (Rs)	10,000
Expenses	7,000
EBIT	3,000
Interest Charges	1,000
Profit before tax (PBT)	2,000
Tax @ 50%	1,000
Net Profit	1,000

We now calculate the **Return on Equity (ROE):**

$$\text{ROE} = \frac{\text{Net Profit}}{\text{Equity Capital}}$$

$$= \frac{\text{Rs 1,000}}{\text{Rs 3,333}} = 30\%$$

The factors that have contributed to this additional return are the followings:

- Though the company has to pay interest at 15% on borrowed capital, the company has been able to generate more than 15 % which is being transferred to the shareholders.
- Interest is a tax deductible expense. The greater the tax rate, the more is the tax shield available to a company which is financially leveraged.

7.5 OPERATING LEVERAGE

High fixed costs and low variable costs provide the greater percentage change in profits both upward and downward. If a high percentage of a company's cost are fixed, and do not decline when demand decreases, this increases the company's business risk. This factor is called operating leverage.

If a high percentage of a company's total costs are fixed, the company is said to have a high degree of operating leverage. The degree of operating leverage (DOL) is defined as the percentage change in operating income (or EBIT) that results from a given percentage change in sales. In effect, the DOL is an index number which measures the effect of a change in sales on operating income, or EBIT. When fixed costs are very large and variable costs consume only a small percentage of each rupee of revenue, even a slight change in revenue will have a large effect on reported profits .Operating leverage, then, refers to the magnified effect on operating earnings (EBIT) of any given change in sales. One of the most dramatic examples of operating leverage is in the airline industry, where a large portion of total costs are fixed.

Thus, in general terms, operating leverage is defined as the percentage change in the earnings before interest and taxes relative to a given percentage change in sales.

7.6 DEGREE OF OPERATING LEVERAGE

The degree of operating leverage is also defined as the change in a company's earnings before interest and tax due to change in sales. Since variable costs change in direct proportion of sales and fixed costs remain constant, the variability in EBIT when sales change is caused by fixed costs. Operating leverage refers to the use of fixed costs in the operation of a firm. A firm will not have operating leverage if its ratio of fixed costs to total cost is nil. For such a firm, a given change in sales would produce same percentage change in the operating profit or earnings before interest and taxes.

Fixed operating costs include administrative costs, depreciation, selling and advertisement expenses etc. With positive (i.e. greater than zero) fixed operating costs , a change of 1 % in sales produces a more than 1% change in Earnings Before Interest and Taxes (EBIT). A measure of this effect is referred to as the Degree of Operating Leverage (DOL). Thus DOL measures the responsiveness of operating income (EBIT) to change in the level of output and indicates its impact on profits when the levels of sales vary. Specially, DOL is defined as the percentage change in operating income (EBIT) divided by the percentage change in the level of output.

$$\textbf{DOL} = \frac{\%\,\Delta\ \textbf{EBIT}}{\%\,\Delta\ \textbf{D}} = \frac{\Delta\ \textbf{EBIT/ EBIT}}{\Delta\ \textbf{Q/D}}$$

In other words ,

$$\textbf{DOL} = \frac{\textbf{Q(P- V)}}{\textbf{Q(P-V) – F}}$$

Where Q = Quantity produced and sold

P = Selling price per unit

V = Variable cost per unit

F = Operating fixed costs



Excercise 1:

A company sells products for Rs 100 per unit, has variable operating costs of Rs 50 per unit and fixed operating costs of Rs 50,000 per year. Show the various levels of EBIT that would result from sale of (i) 1,000 units (ii) 2,000 units and (iii) 3,000 units.

	Decrease	Base level	Increase
Sales in units	1,000	2,000	3,000
Sales revenue (Rs)	1,00,000	2,00,000	3,00,000
Less : Variable operating cost (Rs)	50,000	1,00,000	1,50,000
Sales revenue-Variable cost (Rs)	50,000	1,00,000	1,50,000
Less : Fixed Operating Cost (Rs)	50,000	50,000	50,000
EBIT (Rs)	0	5 0,000	1,00,000
Percentage (Decrease/Increase)	-100%		+ 100%

Interpretation:

From the above illustration, we get the following result:

(i) A 50 percent increase in sales (from 2,000 to 3,000 units) results in a 100 percent in EBIT (from Rs 50,000 to Rs 1, 00,000).

(ii) A 50 percent decrease in sales (from 2,000 to 1,000 units) results in a 100 percent decrease in EBIT (from Rs 50,000 to zero).

Exercise 2:



A company sells its products for Rs 50 per unit, has variable costs of Rs 30 per unit and fixed operating costs of Rs 17,000 per year. Its current level of sales is 1000 units.

(i) Determine the degree of operating leverage.

(ii) What will happen to EBIT if sales change (i) rise to 1350 units and (ii) decrease to 850 units?

Solution: EBIT at various sales levels

Sales in units	850 units	1000 units	1250 units
Sales revenue (Rs)	42,500	50,000	62,500
Less : Variable cost (Rs)	25,500	30,000	37,500
Sales revenue-Variable cost	17,000	20,000	25,000
Less : Fixed operating cost	17,000	17,000	17,000
EBIT	0	3,000	8,000

Interpretation:

(i) A decrease of 25 % in sales volume (from 1000 units to 850 units) leads to 100 percent decline in EBIT (from Rs 3,000 to zero).

(ii) An increase of 25% in sales volume (from 1000 units to 1250 units) results in 1.66 % increase in EBIT.

The two illustrations (1 and 2) show that when a company has fixed operating costs, an increase in sales volume results in a more than proportionate increase in EBIT. Similarly, a decrease in the level of sales has an exactly opposite effect. This is called as operating leverage, the former being favourable leverage, while the latter is unfavourable.

Thus it is clear that the greater the DOL , the more sensitive is EBIT to a given change in unit sales . DOL is therefore a measure of company's or business risk. Business risk refers to the uncertainty or variability of the company's EBIT.

7.7 COMBINED EFFECT OF OPERATING AND FINANCIAL LEVERAGE

The combined effect of two leverages can be quite significant for the earnings available to ordinary shareholders. They cause wide fluctuation in earnings per share for a given change in sales. If a company employs a high level of operating and financial leverage, even a very small change in the level of sales will cause significant effect on the earning per share.

The operating leverage has its effects on operating risk and is measured by the percentage change in EBIT due to percentage change in sales. The financial leverage has its effects on financial risk and is measured by the percentage change in EPS due to percentage change in EBIT. Since both these leverages are closely concerned with the ability to cover fixed charges , if they are combined , the result is total leverage and the risk associated with combined leverage is known as total risk.

The degree of combined leverage is expressed in the following manner

DCL = DOL X DFL , where DCL = Degree of combined leverage
DOL = Degree of operating leverage
DFL = Degree of financial leverage

Substituting the values of DOL and DFL , we have :

$$DCL = \frac{\%\text{ change in EBIT}}{\%\text{ change in sales}} \times \frac{\%\text{ change in EPS}}{\%\text{ change in EBIT}}$$

$$= \frac{\%\text{ change in EPS}}{\%\text{ change in sales}}$$

$$DCL = \frac{\text{Sales revenue} - \text{Variable cost}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{EBIT} - I} = \frac{\text{Sales revenue} - \text{Variable cost}}{\text{EBIT} - I}$$

A greater DOL or DFL will raise DCL. DCL is a measure of the total risk or uncertainty associated with shareholders' earnings that arises because of operating and financial leverage. Operating and financial leverage can be obtained in a number of different ways to obtain a desirable degree of total leverage and an acceptable level of total risk.



Exercise 3:

Suppose company FGL ltd. sells 1000 units at Rs 10. It has a variable cost of Rs 3 per unit and fixed costs of Rs 4.00. EBIT is Rs 3000 and Interest amount is Rs 1000. Fixed cost is Rs 4000.

(i) Calculate DCL.

Solution:

DCL = DOL X DFL

$$DOL = \frac{Q\ (P - V)}{Q\ (P - V) - F} = \frac{1000(10-3)}{1000(10-3) - 4000} = 2.33$$

$$DFL = \frac{EBIT}{EBIT - I} = \frac{3000}{3000\text{-}1000} = 1.5$$

DCL = 2.33 X 1.5 = 3.5

Interpretation:

This means that a output of 1000 units, a 1 % variation in the quantity produced and sold will cause a 3.5 change in EPS.



CHECK YOUR PROGRESS

Q.1: Fill in the blanks with appropriate word :

i) _____ refers to the incurrence of fixed operating costs in the company's income statement.

ii) A simple indication of _____ is to look at how earnings are affected by a change in sales.

iii) Total leverage is a measure of _____ risk. It measures how _____ is affected by a change in sales.

iv) Total leverage is the _____ of _____and _____.

Q.2: A company's sales, variable costs and fixed cost amount to Rs 75,00,000, Rs 42,00,000 and Rs 6,00,000 respectively. It has borrowed Rs 45, 00,000 at 9 percent and its equity capital totals Rs 55,000.

(i) What are the operating, financial and combined leverage of the company?

(ii) If the sales drop to Rs 50, 00,000, what will the new EBIT be?

Q.3: An income statement of ACC ltd. is as follows:

	Rs
Sales	9,60,000
Variable Cost	5,60,000
Earning before Fixed Cost	4,00,000

Fixed Cost	2,40,000
	1,60,000
Interest	60,000
Earning before tax	1,00,000
Tax	50,000
Net Income	50,000

Compute the degree of (i) Operating Leverage (ii) Financial Leverage and (iii) Combined Leverage



7.8 LET US SUM UP

In this unit we have discussed the following:

- Leverage is the existence of fixed costs among a company's cost.
- There are three types of leverage, namely, financial, operating and combined.
- Financial leverage results from the presence of fixed financial charges such as interest on debt and dividend on preference shares.
- Financial leverage is defined as the ability of a company 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) is defined as the percentage change in earnings per share [EPS] that results from a given percentage change in earnings before interest and taxes (EBIT) and it is calculated as DFL = Percentage change in EPS divided by Percentage change in EBIT.
- Operating leverage refers to the company's ability to use fixed operating costs to magnify the effect of changes in sales on its operating profits (EBIT).
- The degree of operating leverage (DOL) is defined as the percentage change in operating income (or EBIT) that results from a given percentage change in sales.
- The combined leverage refers to the combination of operating leverage and financial leverage.



7.9 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.

7.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: i) Operating leverage ii) Operating leverage iii) Total risk , EPS iv) Product , Operating leverage , Financial leverage.

Ans to Q.2: i) 1.22 ,1.18, 1.44 ii) Rs 16,00,000

Ans to Q.3: i) 2.50, ii) 1.60, iii) 4.00



7.11 MODEL QUESTIONS

Q1. What is meant by the term “leverage”?

Q2. What are the types of risk generally associated with financial leverage?

Q3. Explain the concept of financial leverage. Show the impact of financial leverage on the Return on Equity

Q4. Outline the concept of Operating leverage.

Q5. Write the formula for the Degree of Combined Leverage.

Q6. Calculate the degree of operating leverage , degree of financial leverage and degree of combined leverage

	A	B
Output in units	70,000	25,000
Fixed costs	10,000	13,000
Variable costs/per unit	0.2	1.5
Interest on borrowed funds	5,000	18,000
Selling price per unit	0.6	0.5

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UNIT 8: CAPITAL BUDGETING DECISION

UNIT STRUCTURE

8.1 Learning Objectives

8.2 Introduction

8.3 Meaning of Capital Budgeting

8.3.1 Importance of Capital Budgeting

8.4 Types of Investments Decisions

8.5 Investment Criteria

8.6 Capital Rationing

8.7 Let Us Sum Up

8.8 Further Reading

8.9 Answers To Check Your Progress

8.10 Model Questions

8.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- discuss the meaning of capital budgeting
- explain the types of investment decision
- outline Investment criteria
- explain about capital rationing

8.2 INTRODUCTION

In this unit we are going to discuss the meaning of capital budgeting and its importance. We will also come to know about the types of investments decisions, investment criteria and capital rationing.

8.3 MEANING OF CAPITAL BUDGETING

Efficient allocation of capital is one of the most important functions of financial management in modern times. The function involves the firm's decision to commit its funds in long-term assets and other profitable activities. Capital Budgeting may be defined as "the firm's decision to

invest its current funds efficiently in the long-term assets in anticipation of an expected flow of benefits over a series of years." It is the process of identifying, analyzing and selecting investment projects whose returns are expected to extend beyond one year. For example, a cement firm may want to start a new plant because of high demand; again a textile engineering graduate would like to start his own textile processing house. All these involve investment in fixed assets which will generate return in terms of cash flows to them. All these will essentially involve capital budgeting decisions.

8.3.1 Importance of Capital Budgeting

The capital budgeting decisions are important because of the following inter-related reasons:

1. **Long-term effects**: These involve decisions in long-term assets which involve high cost. As such the impacts of these investments have to be checked carefully by using modern techniques or investment criteria.
2. **Irreversibility**: Long- term assets investment decisions are not easily reversible once implementation has taken place. If these have to be reversed then huge financial loss may occur to the firm.
3. **More Risky**: Investment in long-term assets increases profit but it may lead to fluctuations in its earnings, the firm will become more risky. Hence, investment decisions decide the future of the business concern.

Capital budgeting decisions are difficult to take because (i) the decisions have to base on expected future years cash inflows and (ii) the uncertainty of future. Identification and measuring of costs and benefits of investment in fixed asstes involve tedious calculations and lengthy process. This becomes more difficult when the period for calculation is very long; say more than 15 years or 20 years.

8.4 TYPES OF INVESTMENT DECISIONS

There are many ways to classify investments. One classification is as follows:

- Expansion of existing business
- Establishments of new business
- Replacement and modernisation

1. **Expansion and Diversification:** A firm may add capacity to its existing product lines to expand existing operations. For example, the HPC Fertilizer Ltd. may increase its plant capacity to manufacture more urea. It is an example of related diversification. A firm may expand its activities in a new business. Expansion of a new business requires investment in new products and a new kind of production activity within the firm. If a packaging manufacturing company invests in a new plant and machinery to produce ball bearings, which the firm has not manufactured before, this represents expansion of new business or unrelated diversification. Sometimes a firm acquires existing firms to expand its business. In either case, the firm makes investment in the expectation of additional revenue.
2. **Establishment of new business:** A firm may establish entirely new business which may or may not be related to the existing business. For example a soap manufacturing company may start producing detergent or may even produce food items.
3. **Replacement and Modernization:** The main objective of modernization and replacement is to improve operating efficiency and reduce costs. Costs savings will reflect in the increased profits, but the firm's revenue may remain unchanged if the assets become outdated with technological changes. The firm must decide to replace those assets with new assets that operate more economically. If a cement company changes from dry process to wet process, it is an example of modernization and replacement. Replacement decisions help to introduce more efficient and economical assets and therefore, are also called cost reduction investments.

4. Another useful way to classify investments is as follows:

- Mutually exclusive investments
- Independent investments
- Contingent investments

1. **Mutually Exclusive Investments:** Mutually exclusive investments serve the same purpose and compete with each other. If one investment is undertaken, others will have to be excluded. A firm may, for example, either use a more labour-intensive, semi-automatic machine, or employ a more capital-intensive, highly automatic machine for production. Choosing the semi-automatic machine precludes the acceptance of the highly automatic machine.
2. **Independent Investments:** Independent investments serve different purposes and do not complete with each other. For example, a heavy engineering firm may be considering expansion of its plant capacity to manufacture additional equipments for oil drilling firms and addition of new production facilities to manufacture excavators for construction businesses. Depending on their profitability and availability of funds, the firm can undertake both investments.
3. **Contingent Investments:** Contingent investments are dependent projects; the choice of one investment necessities undertaking one or more other investments. For example, if a firm decides to build a factory in a remote, backward area, it may have to invest in houses, roads, hospitals, schools etc. for employees to attract the work force. Thus, building of factory also requires investment in facilities for employees. The total expenditure will be treated as one single investment.

8.5 INVESTMENT CRITERIA

Capital budgeting decisions form the framework for a firm's future development. Selection of a profitable investment decision will help to maximize value of the firm through the maximization of profits. A wide range of criteria has been suggested to select the investment decisions. The investment evaluation criterion used, should possess the following characteristics:

- It should provide a means of distinguishing between acceptable and unacceptable projects.
- It should provide a ranking of projects in order of their desirability.
- It should also solve the problem of choosing among alternative projects.
- It should be a criterion which is applicable to any conceivable investment project.
- It should recognize the fact that bigger benefits are preferable to smaller ones and early benefits are preferable to latter benefits.

The investment criteria are broadly divided into two categories:

(I) Non-discounted Cash Flow Criteria:

(i) Payback period,

(ii) Accounting rate of return.

(II) Discounted Cash Flow (DCF) criteria

(i) Net present value,

(ii) Internal rate of return,

(iii) Profitability index or Benefit-cost ratio.

It should be realized that different firms may use different methods. Which method is appropriate for a particular purpose of the firm will depend upon the circumstances. A large firm may use more than one technique for making capital budgeting decisions, while a small firm may contend with using only one technique which involves minimum funds and time. However, to avoid confusion, same method or methods should be used uniformly for every project throughout the firm. Though these selection criteria will help management in making decisions objectively, the (management) must still exercise their common sense and judgment in making the decisions.

1. NON-DISCOUNTED CASH FLOW CRITERIA:

i. Payback Period: The payback (or payout) period is one of the most popular and widely recognized criteria or technique of evaluating investment decisions. Pay back period may be defined as that period which require to recover the original cash outflow made in the investment. In other words it is the minimum number of years

required to recover the original investment. It is defined as the number of years required to recover the original cash outlay invested in a project. The cash flow after taxes are used to compute pay back period.

If the project generates constant annual cash inflows, the payback period can be computed dividing cash outlay by the annual cash inflow. That is

$$\text{Payback period} = \frac{\text{Cash outlay (investment)}}{\text{Annual cash inflow}}$$

If the cash flows after taxes are unequal or not uniform over the periods in which these are expected to occur then the payback period can be found out by adding up the cash inflows until the total is equal to the initial cash outlay.

Acceptance Rule:

The payback period can be used as an accept-or-reject criterion as well as a method of ranking different investment decisions. If the payback period calculated for an investment budget is less than the maximum payback period set up by the management, it would be accepted, if not, it would be rejected. As a ranking method, it gives highest ranking to the capital budgets which has shortest payback period and lowest ranking to those with highest payback period. Thus, if the firm has to choose among two mutually exclusive projects, capital budgets with shorter payback period will be selected.

Advantages of Payback Period:

- It is simple, both in concept and application.
- It emphasizes earlier cash inflows; it may be sensible criterion when the firm is pressed with problems of liquidity.
- The risk of investment decision may be solved by having a shorter standard payback period as it may ensure guarantee against loss.

Disadvantages of Payback Period:

- Payback is not an appropriate method of measuring the profitability of an investment decision as it does not consider all cash inflows yielded over the life of the investment.

- It fails to consider the time value of money. Cash inflows, in the payback calculation, are simply added without suitable discounting. This violates the basic principle of financial analysis which stipulates that cash flows occurring at different points of time can be added or subtracted only after suitable compounding or discounting.
- There is no rational basis for setting a maximum payback period .It may lead to subjective decision as a firm may face difficulty in determining the maximum acceptable payback period.

ii. Accounting Rate of Return Method

The Accounting Rate of Return (ARR) is based upon accounting information rather than cash flows. There are a number of alternative methods for calculating the ARR. The most common method is as follows:

$$ARR = \frac{\text{Average annual profits after taxes}}{\text{Average Investment}}$$

The average profits after taxes are determined by adding up the after-tax profits expected for each year over the expected life of investment and dividing the result by the number of years. The average investment would be equal to the original investment plus salvage value (if any) divided by two. However, the averaging process assumes that the firm uses straight line method of depreciation. For example, if a machine has salvage value, then only the depreciable cost (cost – salvage value) of the machine should be divided by two in order to ascertain the average investment. Thus,

$$\text{Average Investment} = \text{Salvage value} + \frac{(\text{Initial cost} - \text{Salvage value})}{2}$$

Acceptance Rule:

As an accept-or-reject criterion, this method will accept all those investment outlays whose ARR is higher than the minimum rate established by management and reject those which have ARR less than the minimum rate. Alternatively, the ranking method can be used to select or reject investment proposals.

Advantages:

The following are the advantages of the accounting rate of return methods.

i. It is very simple to understand and use.

ii. It can be readily calculated using the accounting data.

iii. It uses the entire stream of incomes in calculating the accounting rate.

Disadvantages:

The Accounting Rate of Return method suffers from the following weaknesses:

i. It uses accounting profits and not cash flows.

ii. It ignores the time value of money. Profits occurring in different periods are valued equally.

iii. It does not consider the lengths of expected life of the investment. For example, it assumes that 25 percent accounting rate for ten years is better than 20 per cent for twenty years.

iv. It is incompatible with the firm's objective of maximizing the market value of shares. Share values do not depend upon accounting rates.



Exercise: 1

Determine the average rate of return from the following data of two machines A and B.

Particulars	**Machine A**	**Machine B**
Cost	Rs 56,000	Rs 56,000
Earnings after depreciation and tax (Rs)		
Year 1	3,300	11,000
2	5,400	9,300
3	7,500	7,000
4	9,300	5,300
5	11,000	3,000
Total	**36,500**	**35,600**
Expected life (years)	5	5
Estimated salvage value	3,000	3,000

$$\text{Average Income of Machine A} = \frac{\text{Rs } 36{,}500}{5} = \text{Rs } 7{,}300$$

$$\text{Average Income of Machine B} = \frac{\text{Rs } 35{,}600}{5} = \text{Rs } 7{,}120$$

$$\text{Average Investment} = \text{Salvage value} + \frac{(\text{Initial cost} - \text{Salvage value})}{2}$$

$$= \text{Rs } 3000 + \frac{(56{,}000 - 3000)}{2} = \text{Rs } 29{,}500$$

$$\text{ARR for machine A} = \frac{7300}{29{,}500} \times 100 = 24.75\ \%$$

$$\text{ARR for machine B} = \frac{7120}{29{,}500} \times 100 = 24.14\ \%$$

2. DISCOUNTED CASH FLOW METHODS:

In order to overcome the limitations of Pay-back Period and Accounting Rate of Return, the discounted cash flow methods are recognized. The distinguishing feature of this method is that they take into consideration the time value of money. These methods also consider all benefits and costs that occur during the expected life of the investment. The commonly used discounted cash flow methods are (i) Net Present Value (ii) Profitability Index or Benefit Cost Ratio and (iii) Internal Rate of Return.

i. Net Present Value Method:

The Net Present Value (NPV) method is the classic economic method of evaluating the investment proposals. It is one of the Discounted Cash Flow (DCF) techniques explicitly recognizing the time value of money. The net present value may be described as the summation of the present values of cash proceeds (CFAT) in each year minus the summation of present values of the cash outflows in each year.

The steps involved in the NPV method are: First an appropriate rate of interest should be selected to discount cash flows. Generally, the appropriate rate of interest is the firm's cost of capital which is equal to the minimum rate of return expected by the investors to be earned by the firm on its investment proposal. Second, the present value of cash inflows/ benefits and the present value of investment outlay/cash outflows should be computed using cost of capital as the discounting rate. If all cash outflows are made in the initial year, then their present value will be equal to the amount of cash actually spent. Third, the net present value should be found out by subtracting the present value of cash outflows from the present value of cash inflows.

Thus, the NPV method is a process of calculating the present value of cash flows (inflows and outflows) of an investment proposal, using the cost of capital as the appropriate discounting rate, and finding out the net present value of subtracting the present value of cash outflows from the present value of cash inflows. The equation for the net present value, assuming that all cash outflows are made in the initial year will be:

$$NPV = \sum_{t=1}^{n} \frac{A_t}{(1+k)^t} - C$$

Where A_1, A_2..... represent cash inflows, C is the initial investment, n is the expected life of the proposal. It should be noted that the cost of capital k, is assumed to be known; otherwise the net present value cannot be calculated.

Acceptance Rule

The acceptance rule, using the NPV method, is to accept the investment decision if its net present value is positive or equal to zero (i.e. (NPV > 0) and to reject it if the net present value is negative (i.e. NPV < 0). If the NPV is zero, it is a matter of indifference.

Advantages:

i. It is superior to other methods of evaluating the economic worth of investments. Because present values are measured in today's rupees, the net present values of different investment proposals may be added to get the combined economic value of investments.

ii. It recognizes all cash flows throughout the life of the project.

iii. It helps to satisfy the objectives for maximizing firm's values.

iv. It recognizes time value of money.

Disadvantages:

i. It fails to give satisfactory answer when investment decisions under consideration involve different amount of investments and with different expected life periods.

ii. There is problem in ascertaining the required rate of return to discount cash flows. The discount rate is the most important element used in the calculation of the present values because different discount rates will give different present values.

iii. The NPV is an absolute measure; hence it cannot be used to compare different investments.



Exercise: 2

Calculate the net present value for project X which initially costs Rs. 20, 000 and generates year-end cash inflows of Rs. 900, Rs. 800, Rs. 700, Rs. 600 and Rs. 500 in one through five years. The required rate of return is assumed to be 10 per cent.

Solution: Net Present Value of project X

Year	Cash inflows	Discounting factor at 10%	PV of cash inflows
1.	Rs 900	0.909	Rs 818
2.	Rs 800	0.826	661
3.	Rs 700	0.751	526
4.	Rs 600	0.683	410
5.	Rs 500	0.620	310
			Rs 2, 752
		Less Investment Outlay	2,0000
			————————
		Net Present Value	Rs 752

The net present value for project X can be calculated by referring to present value table, where we find the appropriate discount factors. Multiplying the discount factors and cash inflows, we shall obtain the present value of cash inflows. The difference between the present value of cash inflows and the initial cash outlay will represent the net present value.

Profitability Index or Benefit Cost Ratio:

It is the ratio of the present value of future cash benefits, at the required rate of return to the initial cash outflow of the investment. It is also known as Benefit Cost Ratio because the numerator measures benefits and denominator measures costs. The formula to calculate benefit-cost ratio or profitability index is as follows:-

$$\text{Benefit cost ratios or PI} = \frac{\text{Present value of cash inflows}}{\text{Present value of cash outflows}}$$

Acceptance Rule

The accept-or-reject rule, using Benefit Cost ratio or PI, is to accept the project if it's PI is greater than one. Such a project will have positive net present value. However, in the case of mutually exclusive investments, the acceptance criterion is: the higher the index, the more profitable is the investment.

Advantages:

i. It is a conceptually sound technique of evaluating investments because it satisfies the requirements of time value of money, totality of benefits and so on.

ii. It measures net present value per rupee of outlay; hence can discriminate between large and small investments and is preferable to the net present value criterion.

Disadvantages:

i. It involves more calculations than the traditional methods (i.e. Payback and A.R.R.) and hence it is very difficult to understand.

ii. When cash outflows occur beyond the current period, the benefit- cost ratio criterion is not suitable.



Exercise: 3

The initial cash outlay of an investment is Rs 100,000 and it generates cash inflows of Rs. 50,000, Rs. 60,000, Rs. 65,000 and Rs. 50,000 in the four years. Calculate PI of the investment assuming 10 percent rate of discount.

Solution: Calculation of Profitability Index

Year	Cash inflows (Rs)	Discount Factor	Present value(Rs)
1	50,000	0.909	45,450
2	60,000	0.826	49,560
3	65,000	0.751	48,815
4	50,000	0.683	34,150

	177,975
Less Outlay	-100,000
NPV	77,975

PI = (177975/100000) =1.77

Internal Rate of Return Method:

The Internal Rate of Return (IRR) method is another discounted cash flow technique which takes account of the magnitude and timing of cash flows. This method is also known as yield on investment, marginal efficiency of capital, rate of return over cost, time adjusted rate of return and so on. But it is appropriately called as internal rate of return as it exclusively depends on the initial outlay and cash inflows of the investment.

The internal rate of return can be defined as that rate which equates the present value of cash inflows with the present value of cash outflows of an investment. In other words, it is the rate at which the net present value of the investment is zero. It is called internal rate because it depends solely on the outlay and proceeds associated

with the investment and not any rate determined outside the investment. It can be determined by solving the following equation:

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

Where r = The internal rate of return

A_t = Cash inflows at different time periods, t= 1,2,…,n

C = Cash outflows or Initial investment

It can be noticed that the IRR equation is the same as used for the NPV method with the difference that in the NPV method the required rate of interest (cost of capital), k, is assumed to be known and the net present value is found, while under the IRR method the value of r has to be determined at which the net present value is zero. The value of r in Equation can be found out by trial and error. The approach is to select any rate of interest to compute the present value of cash inflows. If the calculated present value of the expected cash inflows is lower than the present value of cash outflows a lower rate should be tried. On the other hand, a higher rate should be tried if the present value of inflows is higher than the present value of outflows. This process will be repeated unless the net present value becomes zero. The following illustration explains the procedure to calculate the internal rate of return.

Exercise: 4



An investment has been assumed to costs Rs. 16,200 and is expected to generate cash inflows of Rs. 8,000, Rs. 7,000 and Rs. 6,000 over its life of three years. You are required to calculate the internal rate of return of the internal rate of return.

To start with, we select a rate of 20 per cent and calculate the present value of cash inflows.

Year	Cash inflows(Rs)	Discount Factor at 20%	Present value(Rs)
1	Rs. 8,000	0.833	Rs. 6,664
2	Rs. 7,000	0.694	Rs. 4,858
3	Rs. 6,000	0.579	Rs. 3,474

	Rs. 14,996
Less Cash outlay	Rs. 16,200
NPV (–)	Rs. 1,204

The net present value indicates that this is a higher rate. Therefore, lower rates should be tried. It should be tried at 14% and 16%.

Year	Cash	Discount	PV	DF	PV
1	8,000	.877	7,016	.862	6,896
2	7,000	.769	5,383	.743	5,201
3	6,000	.675	4,050	.641	3,846
			16,449		15,943
Less Cash outlay			16,200		16,200
NVP			(+) Rs. 249		(–) Rs. 257

It can be observed from the above calculations that the true rate of return lies between 14 per cent and 16 per cent. It should be now tried at 15 per cent .It is seen that at 15% the net present value is zero.

Year	Cash	Discount Rate (15)	Present value(Rs)
1.	8,000	.870	Rs 6, 960
2.	7, 000	.756	5, 292
3	6, 000	.658	3, 948
			Rs. 16, 200

Less Cash outlay	16, 200
	——————————-
NPV	0

Acceptance Rule:

The use of IRR as measure to accept investment decision involves a comparison of the actual IRR with the required rate of return. The investment would qualify to be accepted if the IRR (r) exceeds the cut-off rate.

Advantages:

i. Like the NPV method, it considers the time value of money.

ii. It considers cash flows over the entire life of the project.

iii. It has a psychological appeal to the users. The percentage figure calculated under this method is more meaningful and acceptable to them, because it satisfies them in terms of the rate of return on capital.

iv. The internal rate of return suggests the maximum rate of return and gives fairly good idea regarding the profitability of the project, even in the absence of the firm's cost of capital. It is also compatible with the firm's maximizing owner's welfare.

Disadvantages:

In spite of its theoretical superiority, the internal rate of return method is said to suffer from the following limitations:

i. It is difficult to understand and use in practice as it involves complicated computation problems.

ii. It may yield results inconsistent with the NPV method if the investments differ in their (a) expected lives, or (b) cash outlays, or (c) timing of cash flows.

iii. It may not give unique answer in all situations. It may yield negative rate or multiple rates under certain circumstances.

8.6 CAPITAL RATIONING

Capital rationing refers to a situation where a firm is not in a position to invest in all capital investments due to the constraints on availability of funds. It may be defined as "a situation where a constraint is placed on the total size of capital investment during a particular period." Normally resources are always limited and the demand for them far exceeds their availability. It is for this reason that the firm cannot take up all the investments though profitable, and has to select a combination of these which will yield the greatest profitability. Selection of projects for this purpose will require the taking of the following steps;

i. Ranking of investments according to profitability index or internal rate of return.

ii. Selecting investments in descending order of profitability until the budget figures are exhausted keeping in view the objective of maximizing the value of the firm.



Exercise: 5

The H L Limited had Rs 10, 00,000 allocated for capital expenditure purpose. The following five investments with required investment, expected annual cash inflows and expected life are under consideration. If the firms minimum required rate of returns is 12 percent, which projects can be accepted with the budget ceiling of Rs 10, 00,000?

Investment	Initial Investment	Cash Inflow	Discount rate (12%) resective life	Present value Of Cash	Project life
A	5,00,000	169,200	3.605	609,966	5
B	1,25,000	28,600	4.968	142,085	8
C	3,50,000	74,300	5.650	419,795	10
D	3,00,000	34,000	6.811	231,574	15
E	4,00,000	57,000	6.194	353,058	12

Investment	A	B	C	D	E
Profitability	609,966=	142,085=	419,795	231,574=	353,058 =
Index	1.2	1.13	=1.19	0.7	0.8
	5,00,000	1,25,000	3,50,000	3,00,000	1,00,000

Investment	Profitability Index	Ranking
A	1.20	1
B	1.13	2
C	1.19	2
D	0.70	5
E	0.80	4

The first step is to rank the investment according to profitability index .The second step is to accept the investment in the descending order. The following three investment would be accepted:

Investment	Initial Investment (Rs.)	Profitability Index	NPV (Rs.)
A	5,00,000	1.20	109,966
C	3,50,000	1.19	69,795
B	1,25,000	1.13	17,085
Total	Rs 975,000		Rs 196,820

Thus the firm is able to utilize Rs. 975,000 out of Rs. 10, 00,000. The expected net present value from these investments is Rs 196,820.



CHECK YOUR PROGRESS:

Q1. Fill in the blanks with appropriate words:

(i) _____ is the process of making _____ decisions.

(ii) _____ is the _____ divided by the annual cash inflow through the expected life of the investment.

(iii) Accounting rate of return does not recognize the _____

(iv) Accept the investment if its IRR exceeds _____

(v) _____ is used widely in ranking the investments competing for limited funds.

Q2. The following data are given for Assam Roofing Ltd.

Initial cost of proposed machine	Rs 75,000
Estimated useful life	7 years
Estimated annual cash inflows	Rs 18,000
Salvage value	Rs 3,000
Cost of capital	12%

[Note: Salvage value is cash inflow occurring at the end of the useful life]

Compute the (i) Pay back period; (ii) Present value of estimated annual cash inflows; (iii) NPV and (iv) IRR

Q.3. P.Bose Ltd. being a traditional firm wants to appraise the investment decision by using accounting rate of return. It is planning to invest Rs 10,00,000 in a new plant which will provide a salvage value of Rs 80,000 at the end of its economic life of 5 years. The profits after depreciation and tax are estimated to be as under:

Year	1	2	3	4	5
Rs	50,000	75,000	1,25,000	1,30,000	80,000



Exercise: 6

ERMLtd. wants to install a new machine in the place of an existing old one, which has become obsolete. The company made extensive enquiries and from the replies received short-listed two offers. The two models differ in cost, output and anticipated net revenue. The estimated life of both the machines is as follows:

		Anticipated after-tax cash flow				
Machine	Cost	Year 1	Year 2	Year 3	Year 4	Year 5
A	25	—	5	20	14	6
B	40	10	14	16	17	8

The firm's cost of capital is 16%. You are required to make an appraisal of the two offers and advise the firm by using the following: (i) Payback Period (ii). Net Present Value(iii). Profitability Index (iv) Internal Rate of Return.

Note: **Present Value of Re. 1**

End of year	16%	18%	20%
1	0.862	0.847	0.833
2	0.743	0.718	0.694
3	0.641	0.609	0.579
4	0.552	0.516	0.482
5	0.476	0.437	0.402

SOLUTION:

(i). Pay- back Period:

Year	**Machine A**		**Machine B**	
	Cash Flow	Cumulative Cash Flow	Cash Flow	Cumulative Cash Flow
1	—	—	10	10
2	5	5	14	25
3	20	25	16	40
4	14	39	17	57
5	6	45	8	65

Pay- back Period is 3 years for both machines

(ii). Net Present Value

		Machine A		Machine B	
Year	DCF @16%	Cash flow	Present Value	Cash flow	Present Value
1	0.862	—	—	10	8.620
2	0.743	5	3.715	14	10.402
3	0.641	20	12.820	16	10.256
4	0.552	14	7.728	17	9.384
5	0.476	6	2.856	8	3.808
Total Present Value			27.119		42.470
Less: Initial Cost			25.000		40.000

Net Present Value (Rs)	2.119	2.470

$$\text{(iii). Profitability Index} = \frac{\text{Present value of cash inflows}}{\text{Investment}}$$

Machine A = $^{27.119}I_{25}$ = 1.085 Machine B = $^{42.470}I_{40}$ = 1.062

(iv) Internal Rate of Return

Machine A

Year	Cash flow	DCF 18%	Present Value	DCF 20%	Present Value
1	—	0.847	—	0.833	—
2	5	0.718	3.590	0.694	3.470
3	20	0.609	12.180	0.579	11.580
4	14	0.516	7.224	0.482	6.748
5	6	0.437	2.622	0.402	2.412
Total Present Value			25,616		24.210
Less: Initial Cost			25.000		25.000
Net Present Value			0.616		(—) 0.790

$$\text{IRR} = 18\% - \frac{(25 - 25.616)}{(25.616 - 24.210)} \times (20\% - 18\%)$$

$$= 18\% - \frac{(-).616}{1.406} \times 2\%$$

$$= 18\ \% + \frac{.616}{1.406} \times 2\% \quad = 18.88\%$$

Machine B

Year	Cash flow	DCF 18%	Present Value	DCF 20%	Present Value
1	10	0.847	8.470	0.833	8.33
2	14	0.718	10.052	0.694	9.716
3	16	0.609	9.744	0.579	9.264
4	17	0.516	8.772	0.482	8.194
5	8	0.437	3.496	0.402	3.216
Total Present Value			40.534		38.720
Less: Initial Cost			40.000		40.000
Net Present Value			0.534		(—) 1.28

$$IRR = 18\% - \frac{(40 - 40.534)}{(40.534 - 38.720)} \times (20\% - 18\%)$$

$$= 18\% - \frac{(-).534}{1.814} \times 2\%$$

$$= 18.59\%$$

Summary of Investment Decision:

Particulars	**Machine A**	**Machine B**
(i) Payback period	3 Years	3 Years
(ii) Net Present Value [@ 16%]	Rs 2.119 Lakh	Rs. 2.47 Lakh
(iii) Profitability Index	1.085	1.062
(iv) IRR	18.8%	18.59%

Suggestion: From the analysis of the above it is observed that Profitability Index and IRR are greater in case of Machine A. Hence Machine A is to be selected even though NPV of it is slightly lesser than Machine B. Payback period of both the machines is equal.



8.7 LET US SUM UP

In this unit we have discussed the following:

i. Capital Budgeting may be defined as "the firm's decision to invest its current funds efficiently in the long-term assets in anticipation of an expected flow of benefits over a series of years."

ii. A wide range of criteria can be used to judge the viability of investment decisions. They fall into two broad categories: discounting criteria and non-discounting criteria. The important discounting criteria are net present value, profitability index and internal rate of return. The major non-discounting criteria are pay back period and accounting rate of return.

iii. The Net Present Value (NPV) is the sum of the present values of all cash flows whether positive or negative that occur over the expected life of the investment decision.

iv. The profitability index is defined as the present value of benefits (cash inflows) divided by the present value of costs (cash outflows).

v. The Internal Rate of Return (IRR) of investment is the discount rate which makes its NPV equal to zero.



8.8 FURTHER READING

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8.9 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: (i) Capital budgeting; long-term investment (ii) Payback period; Initial investment (iii) Time value of money (iv) The cost of capital (v) Profitability Index

Ans to Q.2: (i) 4.167 years (ii)Rs 82, 148 (iii) Rs 8,505 (iv) 14.95%

Ans to Q.3: A.R.R. = 20%

8.10 MODEL QUESTIONS

Q1. Define Capital Budgeting. Discus the importance of capital budgeting.

Q2. Define Capital Rationing. How would investments be ranked under capital rationing?

Q3. Define and explain the following with their respective advantages and disadvantages

(i) Pay-back period (ii) Average Rate of Return (iii) NPV (iv) IRR

Q4. Evaluate the following:

a) Payback period

b) Accounting rate of return

c) Net Present Value

d) Internal Rate of Return

e) Calculate Profitability Index for each project from the given data : A firm is considering two mutually exclusive projects. Both require an initial cash outlay of Rs.10, 000 each and have a life of five years. The firm's required rate of return is 10% and pays tax @ 50%. The investments will be depreciated on a straight line basis. The net cash flows (before taxes) expected from the projects are as follows:

	Project 1	Project 2
Year 1	Rs.4000	Rs.6000
Year 2	Rs.4000	Rs.3000

Year 3	Rs.4000	Rs.2000
Year 4	Rs.4000	Rs.5000
Year 5	Rs.4000	Rs.5000

Which investment should be accepted and why?

Q5. From the following information, calculate NPV and PI:

Initial outlay: Rs 50,000

Cash inflow:

Year	1	2	3	4
Cash inflow(Rs):	20,000	15,000	25,000	10,000

Assume discount factor at 10%.

*** ***** ***



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