Bachelor of Commerce

BC - 502

FINANCIAL MANAGEMENT

Directorate of Distance Education

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Lesson No.: 1	

Financial Management: Meaning, Objective, Function And Scope

STRUCTURE

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1.0 LEARNING OBJECTIVES

After reading this lesson, you should be able to:

- Understand the meaning and nature of financial management.
- Describe the relation of finance function with other disciplines.
- Know the scope of financial management.
- Identify the function of finance.

- Explain the objectives of financial management.

1.1 INTRODUCTION

Finance is regarded as the life blood of a business enterprise. This is because in the modern money-oriented economy, finance is one of the basic foundations of all kinds of economic activities. Long considered a part of economics, corporation finance emerged as a separate field of study in the early part of 20th century. At first it dealt with only the instruments, institutions, and procedural aspects of capital markets. Accounting data and financial records were not the kind we use today, nor were regulations making it necessary to disclose financial data. But interest in financial innovations, promotions, consolidations, and mergers has always been increasing.

In a modern company's development, the financial manager plays a dynamic role. Besides records, reports, the firm's cash position, and obtaining funds, the financial manager is concerned with (1) investing funds in short-term as well as in long-term assets and (2) obtaining the best mix of financing and dividends in relation to the overall solution of the firm. All of this demands a broad outlook and an alert creativity that will influence almost all facts of the enterprise and its external environment.

1.2 FINANCE AND FINANCIAL MANAGEMENT

1.2.1 RELATION OF FINANCE FUNCTION WITH OTHER DISCIPLINES

Finance function is not a totally independent area of Business. Being an integral part of the over-all management, it draws heavily on related disciplines and fields of study, namely, economics, accounting, marketing, production and operations research. These areas are both inter-related and different as well. Now, we discuss the relationship among finance function and the various related disciplines.

Finance and Economics: Traditionally, finance was not considered a separate input. In the traditional theory, finance was supposed to take the form of either circulating capital or fixed capital, and the concept of finance as distinct from capital was not well conceived and developed. In modern theory finance is different from capital. The field of finance is closely allied to the field of economics. Finance management is a form of applied economics, which draws heavily on economic theory. Economics deals with supply and demand, costs and profits, production, consumption and so on. Finance is closely related to economics, for it is seriously concerned with supply and demand in the financial markets, including the stock exchange, the money market, foreign exchange market, etc. It is equally concerned with the policies

of the Reserve Bank of India as they are reflected in commercial banks and financial institutions in general. When money-market is tight, financial environment is hard-hit. In a period of economic depression, business activity recedes and the financial market is adversely affected. The importance of economics in the development of finance function and economic theory is more evident in two areas of economics-macroeconomics and micro-economics.

Macro-economics is concerned with the structure of banking system, financial intermediaries, the public finance system and economic policies of the Government. Since the business firm has to operate in the macroeconomic environment, the finance manager has to be aware of the institutional framework it contains. He must be alert to the consequences of the varying levels of economic activities and changes in economic policies. In the absence of an understanding of the broad economic environment, the finance manager will not be able to achieve financial success.

Micro-economics is concerned with the determination of optimal operating strategies for firms as individuals, with the efficient operations and with defining an action that will make it possible for a firm to achieve financial success. The concepts involved in supply and demand relationships and profit maximizing strategies are drawn for the micro economic theory. The theories related to the management of utility preference, risk and determination of value are rooted in micro economic theory. The rationale of depreciating assets is taken from this area of economics. Although the finance manager does not directly apply the theories of micro economics, he must act in conformity with the general principles established by these theories. Thus, knowledge of both micro and macroeconomics is necessary for a finance manager so as to understand the financial environment. Stated simply, economics is closely intertwined with finance.

Finance and Accounting: Much of modern business management has only been possible by accounting information. Management is a process of converting information into action; and accounting is a source of most of the information that is used for this purpose. Accounting has been described by Richard M. Lynch and Robert W. Williamson as "the measurement and communication of financial and economic data". It is a discipline which provides information essential to the efficient conduct and evaluation of the activities of any organization. The end-product of accounting is financial statements such as the balance sheet, the income statement and the statement of changes in financial position (sources and uses of funds statement). The information contained in these statements and reports assists the financial managers in

assessing the past performance and future directions of the firm and in meeting certain legal obligations, such as payment of taxes and so on. Thus, accounting and finance are functionally closely related. However, there are key differences in viewpoint between finance and accounting. The first difference relates to the treatment of funds while the second relates to decision-making.

As far as the viewpoint of accounting relating to the treatment of funds is concerned, the measurement of funds in it is based on the accrual system. For example, revenue is recognized at the point of sale and not when collected. Similarly, expenses are recognized when they are incurred rather than when actually paid. The accounting data based on accrual system do not reflect fully the financial circumstances of the firm. On the other, the viewpoint of finance relating to the treatment of funds is based on cash flows. The revenues are recognized only when actually received in cash and expenses are recognized on actual payment (i.e. cash outflow). This is on account of the fact that the finance manager is concerned with maintain solvency of the firm by providing the cash flows necessary to satisfy its obligations and acquiring and financing the assets needed to achieve the goals of the firm.

Regarding the difference in accounting and finance with respect to their purpose, it needs to be noted that the purpose of accounting is collection and presentation of financial data. The financial manager uses these data for financial decision-making. But, from this one should not conclude that accountants never make decisions or financial managers never collect data. The fact is that the primary focus of the functions of accountants is on collection and presentation of data while the finance manager's major responsibility is concerned to financial planning, controlling and decision- making.

Finance and other concerned Disciplines: There exists an inseparable relationship between the finance functions on the one hand and production, marketing and other functions on the other. Almost all kinds of business activities, directly or indirectly, involve the acquisition and use of money. For instance, recruitment and promotion of employees in production is clearly a responsibility of the production department. But it requires payment of wages and salaries and other benefits, and thus, involves finance. Similarly, buying a machine or replacing an old machine for the purpose of increasing productive capacity affects the flow of funds. Sales promotion policies require outlays of cash, and therefore, affect financial resources. How, then, we can separate production and marketing functions and the finance function of making money available to meet the costs of production and marketing operations ? We can't give precise

answer to this question. In fact, finance policies are devised to fit production marketing and personnel decisions of a firm in practice.

1.2.2 FUNCTIONS OF FINANCE

Depending upon the nature and size of the firm, the finance manager is required to perform all or some of the following functions. These functions outline the scope of financial management.

(A) Investment Decision

Investment decision is the 'oldest' area of the recent thinking in finance. The investment decision relates to the selection of assets in which funds will be invested by a firm. The assets which can be acquired fall into two broad groups: (i) long term assets which yield a return over a period of time in future, (ii) short-term or current assets defined as those assets which in normal course of business are convertible into cash usually within a year. The decisions related to the former aspect are called 'capital budgeting' decisions while the latter type of decisions are termed as working capital decisions. Because of the uncertain future, capital budgeting decision involves risk. Other major aspect of capital budgeting theory relates to the selection of a standard or hurdle rate against which the expected return of new investment can be assayed. This standard is broadly expressed in terms of the cost of capital. The measurement of the cost of capital is, thus, another major aspect of the capital budgeting decision. For details of these decisions, please see lesson 5.

Working Capital Management, on the other hand, deals with the management of current assets of the firm. Though the current assets do not contribute directly to the earnings, yet their existence is necessitated for the proper, efficient and optimum utilization of fixed assets. There are dangers of both the excessive as well as the shortage of working capital. A finance manager has to ensure sufficient and adequate working capital to the firm. A trade-off between liquidity and profitability is required.

(B) Financing Decision

Provision of funds required at the proper time is one of the primary tasks of the finance manager. Every business activity requires funds and hence every financial manager is confronted with this problem. The investment decision is broadly concerned with the asset-mix or the composition of the assets of a firm. The concern of the financing decision is with the financing-mix or capital structure or leverage. The term capital structure refers to the proportion of debt and equity capital. The financing decision of a firm relates to the choice of the proportion of these sources to finance the investment requirements. There are two

aspects of the financing decision - (i) the theory of capital structure which shows the theoretical relationship between the employment of debt and the return to the shareholders. The use of debt implies a higher return to the shareholders as also the financial risk. A judicious mix of debt and equity to ensure a trade-off between risk and return to the shareholders is necessary. A finance manager has to evaluate different combinations of debt and equity and adopt one which is optimum for the firm. Leverage analysis, EBIT-EPS analysis, capital structure models etc. are some of the tools available to a finance manager for this purpose.

(C) Dividend Decision

Another major area of decision making by a finance manager is known as the Dividend decisions which deal with the appropriations of after tax profits. The finance manager must decide whether the firm should distribute all profits, or retain them, or distribute a portion and retain the balance. Like the debt policy, the dividend should be determined in terms of its impact on the shareholder's value. The optimum dividend policy is one which maximises 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 pay-out ratio. The dividend pay-out ratio is equal to the percentage of dividends distributed to earnings available to shareholders. The financial manager should also consider the questions of dividend stability, bonus shares and cash dividends.

1.2.3 ORGANISATION OF FINANCE FUNCTION

Because of the vital importance of the financial decisions to a firm, it is essential to set up a sound and efficient organisation for finance function. The ultimate responsibility of carrying out the finance functions lies with the top management. Thus, a department to organize financial activities may be created under the direct control of the board of directors. Figure 1.1 depicts the organisation of the financial management function in a large typical firm.

It should be remembered that the job of the chief financial executive does not cover only routine aspects of finance and accounting. As a member of top management he is closely associated with the formulation of policies as well as decision making. Under him controllers and treasures, although they may be known by different designations in different firms. The tasks of financial management and allied areas like accounting are distributed between these two key financial officers. The functions of the treasurer include obtaining finance, banking relationship, investor relationship, cash management,

working capital finance, insurance and credit management. The typical functions performed by the controller are: (a) financial accounting, (b) internal audit, (c) taxation, (d) budgeting, planning and control, (e) economic appraisal, (f) management accounting and control.

1.2.4 MEANING AND NATURE OF FINANCIAL MANAGEMENT

Finance is the lifeblood of a business firm. The health of every business concern mainly depends on the efficient handling of finance functions. In simple term, Financial Management may be defined as the management of the finance or funds of a business unit in order to realize the objective of the firm in an efficient manner. It is broadly concerned with the mobilization and use of funds by a business firm. Financial management is that managerial activity which is concerned with the planning and controlling of the firm's financial resources. In other words, it is concerned with acquiring, financing and managing assets to accomplish the overall goal of a business enterprise (mainly to maximise the shareholder's wealth).

"Financial management is concerned with the efficient use of an important economic resource, namely capital funds". **Solomon Ezra & J. John Pringle.**

"Financial management is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient business operations" **J.L. Massie.**

"Financial Management is concerned with managerial decisions that result in the acquisition and financing of long-term and short-term credits of the firm. As such it deals with the situations that require selection of specific assets (or combination of assets), the selection of specific liability (or combination of liabilities) as well as the problem of size and growth of an enterprise. The analysis of these decisions is based on the expected inflows and outflows of funds and their effects upon managerial objectives". **Phillippatus.**

The term 'nature' as applied to financial management refers to its relationship with closely related fields of economics and accounting, its scope, functions and objectives. Traditionally, 'finance' was not considered a separate input until finance theory became well developed. Finance function as an area of management is of recent origin. Financial management has gained considerable importance over the years. It is concerned with overall managerial decision making, in general, and with the management of economic resources in particular. The term financial management can be defined as the management of flow of funds in a firm and therefore it deals with the financial decision making of the firm. Since rising

of funds and their best utilization is the key to success of any business organizations', the financial management as a functional area has got a place of prime relevance. All business activities have financial implications and hence financial management is inevitably related to almost every sphere of business operations.

1.2.5 SCOPE OF FINANCIAL MANAGEMENT

Financial management, as an academic discipline, has undergone significant changes over years as regards its scope and coverage. As such the role of finance manager has also undergone fundamental changes over the years. In order to have a better exposition to these changes, let us study both the traditional approach and the modern approach to the finance function.

Traditional Approach

Initially the finance manager was concerned and called upon at the advent of an event requiring funds. The finance manager was formally given a target amount of funds to be raised and was given the responsibility of procuring these funds. So, his function was limited to raising funds as and when the need arise. Once the funds were raised, his function was over. Thus, the traditional concept of financial management included within its scope the whole gamut of raising the funds externally. The finance manager's role was limited to keeping accurate financial records, prepare reports on the corporations' status and performance and manage cash in a way that the corporation is in a position to pay its bills in time. The term 'Corporation Finance' was used in place of the present term 'Financial Management'.

The traditional approach dominated the scope of financial management and limited the role of the finical manager simply to 'raising of funds'. And it was during the major events, such as promotion, reorganization, expansion or diversification in the life of the firm that the financial manager was called upon to raise funds. Because of its restricted role, the finance text books, for example, in the USA, till the mid-1950s covered discussion of the instruments, institutions and practices through which funds are obtained. Further, as the problem of raising funds was more intensely felt in the case of an 'episodic event', these books also contained detailed descriptions of the major events like mergers, consolidations, reorganizations and recapitalizations. The notable feature of the traditional view of financial management was the assumption that the financial manager had no concern with the decisions of allocating the firm's funds. These decisions were assumed to be given to him.

The traditional approach did not go unchallenged even during the period of its dominance. It has been criticized because it failed to consider the day-to-day managerial problems relating to finance of the firm. It concentrated itself to looking into the problems from management's the insider's point of view (see Solomon, Ezra, The Theory of Financial Management, Columbia University Press, 1969, p.3). The second ground for criticism of the traditional treatment was that the focus was on financing problems of corporate enterprises. To that extent the scope of financial management was confined only to a segment of the industrial enterprises, as non-corporate organizations lay outside its scope. Finally, this approach was having lacuna with regards to its focus only on long- term financing. The issues involved in working capital management were not in the preview of finance function.

Modern Approach

The modern or new approach is an analytical way of looking into the financial problems of the firm. Financial management is considered a vital and an integral part of overall management. To quote Ezra Soloman: "The central issue of financial policy is the wise use of funds, and the central process involved is a rational matching of advantages of potential uses against the cost of alternative potential sources so as to achieve the broad financial goals which an enterprise sets for itself".

Thus, in a modern enterprise, the basic function is to decide about the expenditure decisions and to determine the demand for capital for these expenditures. In other words, the finance manager, in his new role, is concerned with the 'efficient allocation of funds'. This problem was not considered important in achieving the firm's long run objectives. The main contents of modern approach to financial management according to Soloman Ezra are: What is the total volume of funds an enterprise should commit? What specific assets should an enterprise acquire? How should the funds required to finance? These three questions cover between them the major financial problems of a firm. In other words, financial management according to the new approach, is concerned with the solution of three problems namely, investment, financing and dividend decisions. We may refer to these decisions as managerial finance functions since they require special care and extraordinary administrative ability.

1.2.6 OBJECTIVES OF FINANCIAL MANAGEMENT

The Process of decision making by a finance manager must be goal oriented one. He must have a specific goal in mind as he plans future course of action. It is generally agreed in theory that the financial goal of the firm should be the maximisation of owners' economic welfare. Owners' economic welfare could be

maximised by maximising the shareholders' wealth as reflected in the market value of shares. In this section, we shall discuss that the shareholder's wealth maximisation is theoretically logical and operationally feasible normative goal for guiding the financial decision making. This part also throws some light on 'profit maximisation goal'.

Profit Maximisation Goal

A business firm is profit-seeking organisation. Hence, profit maximisation is well considered to be an important means for achieving the objective of maximising the owners' economic welfare. According to financial experts too, one approach to determine the decision criterion for financial management is the profit maximisation goal. Under this approach, actions that increase profits should be undertaken and those that decrease profits are to be avoided. In specific operational terms, as applicable to financial management, the profit maximisation criterion implies that the investment, financing and dividend policy decisions of a firm should be oriented to the maximisation of profits.

Firms in market economy are expected to produce goods and services desired by society as efficiently as possible. Price system is the most important organ of a market economy indicating what goods and services society wants. Goods and services in great demand can be sold at higher prices. This results in higher profits for firms. Thus price system provides signals to managers to direct their efforts towards areas of high profit potential. The buyer's behaviour and extent of competition determine the prices, and thus, affect the allocation of resources for producing various kinds of goods and services.

The economists are of the opinion that under the conditions of free competition, businessmen pursuing their own self-interests also serve the interest of society. It is also assumed that when individual firms pursue the interest of maximising profits, society's resources are efficiently utilized. Thus, profit is a test of economic efficiency. It provides the yardstick by which economic performance can be judged. Moreover, it leads to efficient allocation of resources as resources tend to be directed to uses which in terms of profitability are the most desirable. Also, it ensures maximum social welfare.

The profit maximisation objective has, however, been criticised in recent years. It is argued that profit maximisation is a consequence of perfect competition, and in the face of imperfect modern markets, it cannot be a legitimate objective of the firm. It is also argued that profit maximisation, as a business objective, was developed in the early of 19th century, when the characteristic features of the

business structure were self-financing, private property and single entrepreneurship. The only aim of sole proprietor then was to enhance his individual wealth and personal power, which could easily be satisfied by the profit maximisation objective. The modern business environment has the features of limited liability and a divorce between management and ownership. In this changed business structure, the owner manager of the 19th century has been replaced by professional manager who has to reconcile the conflicting objectives of all the parties connected with the business firm. So, now-a-days profit maximisation is regarded as unrealistic, difficult, unfair and immoral.

Besides the aforesaid objections, profit maximisation fails to serve as an operational criterion for maximising the owners' economic welfare. It suffers from the following limitations:

(i) **It is vague:** It does not clarify what exactly it means. For example, which profits are to be maximised, short-term or long-run, rate of profit or the amount of profit?

(ii) **It ignores timings:** The concept of profit maximisation does not help in making a choice between projects giving different benefits spread over a period of time. The fact that a rupee received today is more valuable than a rupee received later is ignored.

(iii) **It ignores risk:** The streams of benefits may possess different degree of certainty. Two firms may have same total expected earnings, but if the earnings of one firm fluctuate considerably as compared to other, it will be more risky. Possibly owners of the firm would prefer smaller but certain profits to a potentially large but less certain stream of benefits.

Wealth Maximisation

On account of the reasons cited above, these days profit maximisation is not considered to be an ideal criterion for making investment and financing decisions. Ezra Soloman has suggested the adoption of wealth maximisation as the best criterion for the financial decision making. This objective is generally expressed in terms of maximisation of the value of a share of a firm.

Wealth maximisation means maximising the 'net present value' (or wealth) of a course of action. The net present value 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 which has a positive net present value creates wealth and, and therefore, is desirable. On the other hand, a financial action resulting in negative net present value should be rejected. Between a numbers of desirable mutually exclusive projects the one with the highest

net present value should be adopted. The wealth of the firm will be maximised if this criteria is followed in making financial decisions (Soloman, Ezra, 1969).

The wealth maximisation criterion is based on the concept of cash flows generated by the decision rather than accounting profit which is the basis of the measurement of benefits in case of the profit maximisation criterion. Measuring benefits in terms of cash flows avoids the ambiguity associated with accounting profits. This is the first operational feature of the net present wealth maximisation criterion. Another important feature of the wealth maximisation criterion is that it considers both the quantity and quality dimensions of benefits. At the same time, it also incorporates the time value of money. The quality of benefits has reference to the certainty with which benefits are expected to be received in future. The more certain the expected returns (cash inflows), the better the quality of benefits and the higher the value. Similarly, money has time value. For the above reasons, the Net Present Value maximisation is superior to the profit maximisation as an operational objective. The net present worth can be calculated as shown below:

$$W = \frac{A_1}{(1+k)^1} + \frac{A_2}{(1+k)^2} + \ldots\ldots\ldots\ldots + \frac{A_n}{(1+k)^n} - C_0$$

Where W = net present value

$A_1, A_2 \ldots\ldots\ldots\ldots A_n$ represent the stream of cash flows expected to occur from a course of action over a period of time; k is the appropriate discount rate to measure risks and timing; and C_0 is the initial outlay to acquire that asset or pursue the course of action.

It can, thus, be seen that in the wealth maximisation decision-criterion the time value of money and handling of the risk as measured by the uncertainty of the expected benefits is an integral part of the exercise. It is, moreover, a precise and unambiguous concept. It is, therefore, an appropriate and operationally feasible decision criterion for financial management decisions.

1.3 CHECK YOUR PROGRESS

1. Investment is the_____.

A. net additions made to the nation's capital stocks

B. person's commitment to buy a flat or house

C. employment of funds on assets to earn returns

D. employment of funds on goods and services that are used in production process

2. Financial Management is mainly concerned with_____.

A. All aspects of acquiring and utilizing financial resources for firms activities

B. Arrangement of funds

C. Efficient Management of every business

D. Profit maximization

3. The primary goal of the financial management is

A. to maximize the return

B. to minimize the risk

C. to maximize the wealth of owners

D. to maximize profit

4. In his traditional role the finance manager is responsible for

A. proper utilisation of funds

B. arrangement of financial resources

C. acquiring capital assets of the organization

D. efficient management of capital

5. Which one of the following is not a money market?

A. Treasury bills

B. National savings certificate

C. Certificate of deposit

D. Commercial paper

1.4 SUMMARY

Financial Management is broadly concerned with the acquisition and use of funds by a business firm. Investment decisions are essentially made after evaluating the different project proposals with reference to growth and profitability projections of the company. Financing decisions are concerned with the determination of how much funds to procure from amongst the various avenues available i.e. the financing

mix or capital structure. Dividend decision is to decide whether the firm should distribute all profits or retain them or distribute a portion and retain the balance. It has been traditionally argued that the objective of a company is to earn profit. This means that the finance manager has to make decision in a manner that the profit is maximized. The alternative to profit maximization is wealth maximization. This is also known as Value maximization or Net Present Worth maximization.

1.5 KEYWORDS

- **Financial Management:** It is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations.
- **Financing Decision:** It is related to the financing mix or capital structure or leverage and the determination of the proportion of debt and equity.
- **Investment Decision:** Investment decision is related with the selection of assets that a firm will invert.
- **Wealth Maximization:** It is maximizing the present value of a course of action.

1.6 SELF ASSESSMENT TEST

Q.1 Define the scope of financial management. What role should the financial manager play in the modern enterprises?

Q.2 What are the basic financial decisions? Explain.

Q.3 "The profit maximisation is not an operationally feasible criterion". Do you agree? Illustrate your views.

Q.4 "The wealth maximisation objective provides an operationally appropriate decision-criterion". Comment.

Q.5 How should the finance function of an enterprise be organised? What functions are performed by the financial officers?

1.7 ANSWERS TO CHECK YOUR PROGRESS

1. C
2. A
3. C
4. B

5. B

1.8 REFERENCES/SUGGESTED READINGS

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Subject: Financial Management	
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Financial Forecasting	

STRUCTURE

2.0 Learning Objectives

2.1 Introduction to Financial Forecasting

- 2.1.1 Financial Planning Prerequisites
- 2.1.2 Corporate Growth
- 2.1.3 Skills Needed for Financial Forecasting
- 2.1.4 Purpose of Financial Forecasting

2.2 Benefits of Financial Forecasting

2.3 Financial Forecasting Techniques

- 2.3.1 Quantitative Financial Forecasting Methods
- 2.3.2 Qualitative Financial Forecasting Methods

2.4 Sales Forecasts and Sales Budget

- 2.4.1 Lengths of Time for Sales Forecasting
- 2.4.2 Components in Pro Forma Financial Statements
- 2.4.3 Conflicting Roles of Budgets
- 2.4.4 Per Cent of Sales Forecasting Method
- 2.4.5 Steps That May be Taken When There is a Forecast Shortfall of Funds
- 2.4.6 Limitations of the Per Cent of Sales Forecasting Method

2.5 Check Your Progress

2.6 Summary

2.7 Keywords

2.8 Self-Assessment Test

2.9 Answers to Check Your Progress

2.10 References/Suggested Readings

2.0 LEARNING OBJECTIVES

After reading this lesson, you should be able to:

- Understand the meaning and nature of financial forecasting.
- Describe the need of finance forecasting.
- Know the process of financial forecasting.
- Various financial forecasting techniques.

2.1 INTRODUCTION TO FINANCIAL FORECASTING

The overall objective of any business firm is to maximize its shareholder's wealth for the constant and long-term growth of the business. It is the duty of every manager to make decisions keeping in mind the future opportunities and threat. In this age of competitive economic environment many uncertainties surround our business. Therefore, proper planning is required. Forecasting represents the integral part of the planning process that is undertaken by the firm. Now, the main question arises what is "forecasting"? Forecasting is the word used for prediction, it means predicting the future values based on the past and present events. Forecasting is not an easy process because many uncertainties surround the future thus, risk and uncertainty are central to forecasting and the degree of uncertainty is always considered while forecasting the future. Financial forecasting is the process of estimating or predicting the business financial performance. Through the forecasting the business tries to predict how it will look financially in the future.

2.1.1 FINANCIAL PLANNING PREREQUISITES

Before beginning the forecasting process, the financial analyst needs to take an introspective look at the company. It is important to know the company's current position and where it might be headed. The following is a list that will help in this process:

- **Corporate Purpose**. Defines the overall goal of the firm (for example, increase the value of the firm by 10 percent per year). Purpose is relatively static. It is also a long-term concept. Here, we decide the overall future direction of the business.
- **Corporate Scope**. Defines the firm's areas of business and strengths or weaknesses within these areas. It is important for a company to know its strengths and weaknesses. This will define its strategic actions. Companies that go beyond their scope often get into trouble.

- **Corporate Objectives**. Define the firm's specific goals. These are often quantitative such as target Return on investment (ROI), earnings per share (EPS), and market share. Goals are not static; they must change as conditions change. Objectives tend to be very specific. These can be long- or short-term and can more carefully define the objectives.
- **Corporate Strategies**. The forecasting model to evaluate the various proposed strategies of the company.

The overall reason to forecast is to help a company reach its objectives and to determine which strategies will accomplish this task. Defining the purpose, scope, and objectives gives you the target to aim your strategies. Financial forecasts are an essential part of business planning, budgeting, operations, funding - they simply help leaders and outside stakeholders make better choices.

A financial forecast is an estimate of future financial outcomes for a company, and it's an integral part of the annual budget process. It informs major financial decisions, such as whether to fund a capital project, undertake a staffing increase or seek funding. Businesses use material information from their financial forecasts on their balance sheets and other disclosures.

A financial forecast gives businesses access to cohesive reports, allowing finance departments to establish business goals that are both realistic and feasible. It also gives management valuable insights into the way the business performed in the past and the way it will compare in the future. Beyond informing internal fiscal controls and decisions, financial forecasts are essential in investor relations and when seeking loans. Banks and other funders weigh forecasts in their own decision-making processes.

2.1.2 CORPORATE GROWTH

The faster a company grows, the greater its need for external funding. It seems ironic that companies that produce high rates of profit and growth are the companies that often run short of funds. However, upon second glance, it may not be as ironic as we first think. Frequently growth requires large investments in new fixed assets, increased inventories, increased receivables, and even more cash. When the asset side of the balance sheet grows faster than the company's ability to generate funding internally, then external funding is required. Without proper planning growth can cause a non-optimal balance of liabilities and equities and inadequate working capital forecasting can help a company determine its funding needs, which helps to ensure the success of growth. Growth requires continual monitoring and planning. Without proper planning a firm can grow right out of business.

2.1.3 SKILLS NEEDED FOR FINANCIAL FORECASTING

Creating models requires excellent mathematical and statistical skills. In addition, teams tasked with financial planning must be:

- Comfortable diving into complex and varied data sets from sales, marketing, human resources, operations and outside sources;
- Skilled in using formulas and processes that allow them to aggregate and manipulate raw data to produce readily consumable reports;
- Familiar with ERP and other financial systems and how this software can automate reporting and assist with more complex analysis;
- Adept at communicating and collaborating with colleagues from across the organization to understand business priorities and goals;
- In possession of deep knowledge of the company and its processes; and
- Problem solvers who can turn mountains of financial data and more subjective information into easily understood reports.

2.1.4 PURPOSE OF FINANCIAL FORECASTING

An effective financial forecast will:

1. Serve as the basis for budgeting decisions;
2. Show investors and creditors that your organization has a plan and is prepared for unforeseen events that may impact revenues and budgets;
3. Provide a barometer for those making material financial decisions;
4. Ensure that an organization is prepared for the best- and worst-case scenarios;
5. Establish controls and raise awareness of a broad range of internal and external variables that can have short- and long-term impacts;
6. Help keep business leaders from being blindsided by events that could impact performance; and
7. Prepare businesses for increases in demand for their goods and/or services.

2.2 BENEFITS OF FINANCIAL FORECASTING

- **Act as a control device**: financial forecasting can be used as control device in order to fix the standard of performances and evaluating the results thereof.

- **Helps to make a blueprint for the business**: it helps to make a blueprint for the business so that the incurring expenses can be controlled.
- **Helps in recognizing the risks and financial crunches**: financial forecasting helps in the acknowledgement of the risks and financial crunchies in the business so that necessary arrangements can be made to save the business from incurring losses.
- **Monitors the optimum utilization of the resources**: future financial prediction helps in analysing the proper requirement of resources and in proper utilisation of the resources.
- **Helps in securing a bank loan**: financial forecasting helps in securing a bank loan because helps us to analyse the repay capacity of paying a loan.
- **Alarms the management:** it alarms the management when any event go out of the control.

2.3 FINANCIAL FORECASTING TECHNIQUES

Financial forecasting techniques are of following two types:

- Quantitative techniques
- Qualitative techniques

In quantitative techniques, forecasters use past observations to generate future forecast. Some of the quantitative techniques are:

- Casual techniques
- Simple linear and multiple regression
- Percentage of sales techniques
- Day sales technique
- Time series methods
- Financial statements
- Projected fund flow and cash flow statement
- Projected income statement and balance sheet

In qualitative techniques, forecasters use their judgments or opinions. It is subjective and non-mathematical in nature. In this way, qualitative techniques use non-quantifiable data for the purpose of forecasting.

Some of the qualitative techniques are:

- Executive opinion
- Market research
- Delphi method
- Reference class forecasting
- Scenario writing
- Sales force polling

2.3.1 QUANTITATIVE FINANCIAL FORECASTING METHODS

In the quantitative methods, the forecasters use past observations to generate forecasts. Usually, a forecaster manipulates and analyzes the existing quantitative data through various quantitative and statistical tools to arrive at the most accurate results. Some of the quantitative methods are:

1. Straight Line Forecasting Method

This method is commonly used when the company's growth rate is constant, to get a straight forward view of continued growth at the same rate. It involves only basic math and historical data. Ultimately, it renders growth predictions that can guide financial and budget goals.

An example of straight-line financial forecasting

A restaurant chain's annual growth rate has held steady at 5% over the past three years. The company expects its growth to continue at that rate over the next two years. By calculating next year's growth at 5% over this year's, and the following year's at 5% above next year's, the company can make accurate predictions about how many people it will need to hire and the added payroll costs for each of those years.

2. Moving Average Forecasting Method

A moving average is the calculation of average performance around a given metric in shorter time frames than straight line, such as days, months or quarters. It is not used for longer time periods, such as years, because that creates too much lag for it to be useful in trend following. This method is used to create a constantly updated average of values with a lot of movement, such as stock prices, as well as values that fluctuate often but not quite as quickly, such as inventory levels during peak retail periods.

In short, this method helps identify underlying patterns which you can then use to evaluate common financial metrics such as revenues, profits, sales growth and stock prices. A rising moving average indicates an uptrend, whereas a falling moving average points to a downtrend.

An example of moving average financial forecasting

A retailer wishes to calculate how much quantity of a product should reorder from a wholesaler. It's the holiday season, so sales are going well overall, but he needs to know which products are trending upward. Rather than try to track sporadic upticks and drops in a specific product's sales throughout the day or over a week, he calculates a moving average for the week to show him the trend and drive his inventory purchase orders.

3. Simple Linear Regression Method

It is used to chart a trend line based on the relationship between a dependent and independent variable. A linear regression analysis shows the changes in a dependent variable on the Y-axis to the changes in the explanatory variable on the X-axis. The correlation between the X and Y variables creates a graph line, indicating a trend, which generally moves up or down, or holds consistent.

An example of simple linear regression forecasting is given below:

Sales and profits are two variables that are key to the success of every company. Using the simple linear regression method, if the trend line for sales (x-axis) and profits (y-axis) rises, then all is well for the company and margins are strong. If the trend line falls because sales are up but profits are down, something is wrong; perhaps there are rising supply costs or narrow margins. However, if sales are down but profits are up, the value of the item is trending upward. This means the company's expenses/costs are down and the linear regression is good—the margin percentage is up when profits are up.

4. Multiple Regression Method

This method uses more than two independent variables to make a projection. Basically, Multiple Linear Regression (MLR) creates a model of the relationship between the independent explanatory variables (parameters) and the dependent response variable (outcome). An example of multiple linear regression is given below:

A trucking company executive wants to predict fuel costs in the next six months. The independent **variables used** in this method are the EIA Gasoline and Diesel Fuel Update, oil futures from a futures exchange, mileage from GPS fleet routing systems, traffic patterns from smart city open data platforms and the number of trucks the company expects to be on the road during the period based on delivery orders. This list is for illustrative purposes only, and other variables may also affect the result (outcome).

In any case, all of the variables are independent of the outcome but also have an effect on the outcome. This model predicts the outcome—in this case, the predicted fuel costs for the period—based on the variables.

5. Days Sales Financial Forecasting Technique

This is a popular technique wherein the forecaster first, calculates the days' sales and then studies how it relates to other items of the It helps in arriving at the balance sheet forecast. Therefore, one can know the requirement of funds and take measures accordingly.

6. Percentage of Sales Financial Forecasting Technique

The sales forecast paves the way for getting a clear picture of the expected future sales with which a manager can forecast the financial requirements of the firm. Any change in the sales will have much effect on other variables of the balance sheet particularly, the assets and liabilities. Thus, it's crucial to make the sales forecast and establish its relationship with other variables as accurately as possible.

7. Time-series methods

This is another popular quantitative method. It involves the gathering of data over different periods for identifying trends. Then, the forecaster analyzes the trends to derive the forecasts mainly for the short-term. For example; simple averaging and exponential smoothing are popular time-series techniques.

8. Financial Statements for Financial Forecasting

Another important tool in the hands of a manager, especially when there is a merger or, at the time of the formation of a new company. Therefore, investors need these statements before providing the required capital to a firm. These statements cover the costs and sales figures of the previous two to three years after excluding some one-time costs.

9. Projected Funds Flow Statement and Projected Cash Flow Statement

The projected funds flow statement represents the data about further procurement of funds from various sources and their application in assets or, repaying debts, etc. whichever the case be. It helps in understanding the impact on by establishing a relationship between sources and application of funds.

On the other hand, the projected cash flow statement primarily focuses on the inflow and outflow of cash. It covers the items which result in the realization of cash or expenditure in cash, It is a detailed statement of the projected cash flows generating from the operating activities, investing activities and financing

activities. Therefore, it proves to be a useful tool for forecasting the financial requirements of the company.

10. Projected Income Statement and Balance Sheet

With the help of the sales forecast and anticipated expenses for a particular period under forecasting estimation, the firm projects the income statement. After that, the forecaster draws a projected balance sheet taking into consideration the expected future increase or decrease of the long-term funds, further acquisition or, disposal of and, the estimated working capital items along with the reference of sales forecasts. In conclusion, financial forecasting is crucial for undermining the business risks. Similarly, the selection of an appropriate financial forecasting method is equally important for deriving the successful results.

2.3.2 QUALITATIVE FINANCIAL FORECASTING METHODS

The qualitative methods use the non-quantifiable or non-measurable data for forecasting purpose. Herein, the manager gives due importance to the consumer's opinion or expert judgment for arriving at suitable results. These methods are widely used when past data is not available. For example, it would be wise to research consumer's preferences while launching a new product in the market. Some of the qualitative methods are:

1. Executive Opinion

The opinions of the key staff hold great value. For example, the sales team comes in contact with the customers and thus, they know their needs and requirements better. Under the executive opinions method, the opinions of experts of different departments such as production, sales, purchasing, and operations are taken to envision and predict the future. Revisions are made in the forecasts beforehand to fulfill customer expectations.

2. Market Research

The management team can undertake complete market research wherein a sample of current and future customers will be selected to discuss and predict a good or service. With market research, the forecaster can figure the demand of a particular good or service. Whether the customers would like to buy a new product or a new variant of the existing product or not? However, this forecasting method is a bit expensive and hence may not always be used.

3. Delphi Method

The Delphi technique revolves around a structured method. A facilitator is there to ease this whole process of deriving the forecasts from a set of experts.

The first step of this method includes the gathering of data through the medium of questionnaires. Multiple rounds are there. The analysis of data is done at every stage. So, the result of preceding rounds forms the basis of the next round. The process of collecting and analyzing iterations continues until they reach a consensus. Consequently, the managers prefer the Delphi method for long-term forecasts only, given the amount of time and effort required in this technique.

4. Reference Class Forecasting

The reference class forecasting is based upon human judgment. Under this method, the forecaster predicts the future according to similar scenarios in other places or times. The manager/forecaster makes the judgment on the expected outcome of a planned action in the future.

5. Scenario Writing

Here, the team generates the most likely scenarios in line with various other scenarios. First, the forecaster calculates the outcomes of different scenarios and then develops the most likely scenarios.

6. Sales Force Polling

This method uses in-depth knowledge of the sales force about customer behavior. The insights help in improving the product/service as per the consumer expectations. The forecaster calculates the average of sales force polling to derive future estimates.

2.4 SALES FORECASTS AND SALES BUDGET

The following sections discuss the definition of and the reasons for preparing sales forecasts and budgets. Additionally, the different methods that may be used to undertake sales forecasting (for example, using moving averages, exponential smoothing and linear regression)

Definition of Sales Forecasts

The sales forecasts represent the firm's estimate of the quantity of the firm's products that the firm expects to sell in the future. The forecasting methods to arrive at the suitable figures in terms of quantity of the firm's products to be sold have been discussed above.

2.4.1 LENGTHS OF TIME FOR SALES FORECASTING

Although any forecast has a percentage of uncertainty, the farther into the future the firm projects, the greater will be the uncertainties. As a rule, there are three lengths of time for sales forecasting:

- Short-range forecasts are for fewer than three months. They are used to make continual decisions about planning, scheduling, inventory and staffing in production, procurement and logistics activities.
- Intermediate forecasts have a span of three months to two years. For most firms, it is usual to prepare up to one year's forecasts. They are used for budgetary planning, cost control, marketing new products, sales force compensation plans, facility planning, capacity planning and process selection and distribution planning.
- Long-range forecasts cover more than two years. They are used to decide whether to enter new markets, develop new products or services, expand or create new facilities, or arrange long-term procurement contracts.

Once the sales forecast has been made, the sales budget is prepared, which shows the quantity of each product that the firm plans to sell and the intended selling price. Hence, it provides predictions of the total revenue (usually by month) from which cash receipts from customers may be estimated. It also provides the basic data for preparing budgets for production costs, and also for selling, distribution and administrative expenses. Hence, it is commonly argued that the sales budget represents the foundation of all other budgets, since all expenditure is ultimately dependent on the volume of sales.

2.4.2 COMPONENTS IN PRO FORMA FINANCIAL STATEMENTS

Pro forma financial statements show the effects and impact of the firm's decisions on its future financial statements. Firms make use of pro forma financial statements throughout the planning process to assess the effects of alternative decisions on various line items in the financial statements. This then allows financial managers to conduct 'what-if tests. For example, what would the effect on profit before tax for the coming year, if sales were to increase by 5%? What would be the effect on profit before tax if interest expenses were to increase by 5% as a result of using more debt to finance the firm's expansion plan? Besides assisting the management of the firm in the decision making process, pro forma financial statements also help the firm to make contingent plans to meet unexpected situations. Components of pro forma financial statements are

- Pro forma income statement—projected revenues, expenses, net income, dividends to be paid and amounts retained for the year
- Pro forma statement of financial position—projected assets, liabilities and equity
- Pro forma cash flow statement—projected cash flows for operations, investing and financing activities

Besides the pro forma financial statements, firms also prepare many budgets that show in greater detail, the resources and responsibilities of each unit and division. The different types of budgets include the following:

- Cash budget—cash inflows, outflows and cash balances
- Sales budget—planned sales in units and sales price amount
- Production budget—scheduled production (quantities and costs)
- Stock budget—planned levels of stocks to maintain
- Purchasing budget—planned purchases of raw materials that the firm uses in the production process
- Labour budget—estimates of the labour hours required to meet the planned production schedule

2.4.3 CONFLICTING ROLES OF BUDGETS

This section serves to merely highlight and caution readers that budgets prepared are usually used to satisfy several purposes. There is hence a probability that the budgets may conflict with each other. For example, the planning role of budgets may conflict with the motivational role of budgets. Demanding budgets that may not be achieved may be more appropriate to motivate maximum performance. However, such budgets are unsuitable for planning purposes. In the case of planning purposes, budgets should be based on easier targets that are expected to be met. Once again, the cautionary explanation serves to highlight that in businesses budgets may also be prepared at high standards or expectations. How this impacts on the motivational level and the actual performance of the firm and its employees becomes a separate issue. There may also be a conflict between planning and performance evaluation roles. For planning purposes, budgets are usually set in advance of the budget period, based on a set of assumptions and anticipated set of circumstance or environment. Such assumptions and anticipations may be based on the forecast figures that were derived based on the forecasting techniques that were earlier discussed. Performance evaluation should be based on a comparison between actual performance and adjusted

budgets (i.e. budgets that have been adjusted to reflect changed circumstances and situations). The reality is that in practice, firms tend to compare actual performance figures with the original unadjusted figures. However, readers should note that if the circumstance and situations have changed so as to render the previously held assumptions and expectations out-dated or no longer applicable, then there will naturally be a conflict between the planning and evaluation activities.

2.4.4 PER CENT OF SALES FORECASTING METHOD

Forecasting financial statements in reality, represents a complex and time consuming approach. Hence, managers tend to use a shorter approach - the percent of sales forecasting method. This method is somewhat crude but would represent a simpler method to estimate the funds required to finance growth. A firm would be successful in achieving sales growth, provided that it is willing to make additional investments in stock, trade debtors, and possibly fixed assets as well. Some short-term financing may come from the additional sales generated, it may entail additional purchases, hence the increase in creditors. Other forms of financing may also come from retained earnings. Whatever remaining necessary financing will have to be obtained from other sources, for example short-term borrowings. The per cent of sales forecasting formula is given as follows:

$$\begin{array}{lcccc} \text{Additional financing needed} & = & \text{Required increase in assets} & - & \text{increase in liabilities} & - & \text{increase in retained earnings} \\ \text{AFN} & = & (A/S)gS & - & (L/S)gS & - & [P(1+g)S - D] \end{array}$$

Where:

AFN = additional financing needed

A/S = typical ratio of quantity of assets to sales achieved (This indicates the increase in assets required per Ringgit of increased sales)

L/S = typical ratio of liabilities to sales achieved (This indicates the increase in liabilities per Ringgit of increased sales)

S = current year sales

g = forecast growth in sales

P = net profit margin on sales

D = cash dividends to be paid.

2.4.5 STEPS THAT MAY BE TAKEN WHEN THERE IS A FORECAST

SHORTFALL OF FUNDS

The finance manager has several options in hand that the finance manager may consider:

- Obtaining new financing - the finance manager may approach the bank and apply for a bigger increase in bank overdraft facility than the current existing facility that the bank has approved to provide
- Reducing assets balance - this may be achieved through better collections from debtors and reduction in stock levels. The finance manager would have to evaluate the impact of shortening the credit period offered to its customers. Additionally, better stock management systems should be considered.
- Increasing liabilities balance - in this case, the manager might consider delaying its payment to its creditors. However, the efficacy of the approach has to be weighed against the adverse consequence that the firm might suffer, in the form of loss of goodwill for instance.
- Reducing the sales growth rate - perhaps the main contributing factor for the additional financing needed is none other than the forecast sales growth. The easiest decision that the firm may take is just to decide that it seeks to achieve less sales than originally planned for and this will automatically reduce the pressure for more financing.
- Reducing the amount of dividends to be paid - by reducing the amount of dividends that the firm may pay in the next year, the cash flow saved may be ploughed back into the firm and used to meet its operating requirements.

The management must weigh the advantages and disadvantages of each action before deciding on the final action to be taken. For example, if the firm currently has excess production capacity for its factory, then in the interest of maximizing the wealth of its shareholders, it should increase its production quantity and hence, the firm would then have more units of products to sell. Of course, it is expected that the management would have performed market analysis to identify if the market can absorb the increase in supply of finished goods in the said market.

2.4.6 LIMITATIONS OF THE PER CENT OF SALES FORECASTING METHOD

The percent of sales method is merely a quick estimation approach of a firm's financing requirements. Readers should be aware of its limitations. Its main limitation is that it provides reasonable estimation

only when asset requirements and financing sources can be assumed to be a constant percentage of sales. Whilst the forecast of future stocks was not discussed earlier using this approach, readers should be able to foresee that the use of ‘percent of sales' method to forecast future stock level would be given by the formula:

$$\text{Stock}_{t+1} = \frac{\text{stock}_t}{\text{sales}_t} \times \text{forecast sales}_{t+1}$$

The assumption surrounding such a method is a 'straight line’ or ‘direct proportion relationship between stock levels and sales. This however ignores stock management principles that are discussed in Working Capital Management, whereby firms might have to hold 'safety stock’ levels to provide for possible situations of stock-outs should deliveries from suppliers become delayed. Also, firms may also seek to use ‘just-in-time’ stock management whereby firms liaise closely with the suppliers. Suppliers then time their deliveries of stock (raw materials) to a firm ‘just in time’ for use by a firm in the manufacturing process. This then reduces the quantity of stocks (raw materials) that the firm may have to hold. Instead, sufficient stocks will have to be held by the suppliers. This in turn reduces the quantity and hence, the cost of stocks in the firm. The limitation of ‘per cent of sales’ forecasting method is further amplified when applied to estimation of required fixed assets. Once again, the formula to estimate desired level of fixed assets would be similarly given by:

$$\text{Fixed assets}_{t+1} = \frac{\text{fixed assets}_t}{\text{sales}_t} \times \text{forecast sales}_{t+1}$$

An example of fixed assets would be ‘property, plant and equipment’. In this case, finance managers will never be able to purchase ‘portions’ of a property, plant and equipment. These are whole, discrete numbers. For machinery, it will be a case of having to consider its production capacity. By purchase in gone additional unit of machinery, the firm may perhaps be able to increase its production by 60%. However, what happens if the forecast increase in sales is 20%. Can the firm decide to purchase 1/3 (i.e.20% / 60%) of a machinery? This situation is known as a case of the existence of ‘lumpy assets’.

2.5 CHECK YOUR PROGRESS

1. Financial forecasting involves the _____ and _____ of a firm's future cash need.

a. minimization, estimation
b. projection, estimation
c. projection, capitalization
d. cycle, composition

2. The _____ are used in financial forecasting.
a. pro forma statement of cash flows
b. cash breakeven analysis
c. cash budgeting
d. all of the above

3. As a company's sales increase, the difference between the forecasted assets _____ and the forecasted current liability _____ is equal to the total financing the company will need.
a. increase, increase
b. increase, decrease
c. decrease, increase
d. decrease, decrease

4. Economies of scale may result in _____ relationships between sales and certain types of assets.
a. linear
b. inverse
c. nonlinear
d. none of the above

5. Working capital decisions affect both the expected profitability and the _____ of a firm.
a. cash flow forecast
b. risk
c. cash budget
d. operating cycle

6. The percent of sales forecasting method is an unrealistic way to forecast a company's financial position because
a) it assumes all expenses will remain the same percent of sales from one year to the next
b) it assumes various balance sheet items will remain the same percent of sales from one year to the next
c) it precludes the idea that a company may reduce costs and therefore increase profit margins
d) all of the above

7. Financial forecasting
a) reflects a set of assumptions regarding a company's financial position
b) provides guidance for controlling the firm's actions to achieve its objectives
c) is virtually error free when done correctly
d) all of the above
e) both a and b

8. The key input to the financial planning process is

a) the sales forecast.
b) pro forma statements.
c) the cash budget.
d) cash receipts.

9. The most vital, and perhaps the most difficult, aspect of financial forecasting is
a) obtaining good data for variables.
b) determining the sales forecast.
c) preparation of pro forma statements.
d) forecasting the cash budget.
e) Pro forma statements

10. Estimate the amount of external financing required to support a given level of sales
a) let management know when it has cash shortages or excesses
b) help in analyzing in advance the level of profitability of a firm in the coming year
c) all of the above
d) both a and c

2.6 SUMMARY

Financial forecasts are an essential part of business planning, budgeting, operations, funding — they simply help leaders and outside stakeholders make better choices. A financial forecast is an estimate of future financial outcomes for a company, and it's an integral part of the annual budget process. It informs major financial decisions, such as whether to fund a capital project, undertake a staffing increase or seek funding. Businesses use material information from their financial forecasts on their balance sheets and other disclosures. Financial forecasting techniques are of two types-Quantitative techniques and Qualitative techniques. The sales forecasts represent the firm's estimate of the quantity of the firm's products that the firm expects to sell in the future. Forecasting financial statements in reality, represents a complex and time consuming approach. Hence, managers tend to use a shorter approach - the percent of sales forecasting method. This method is somewhat crude but would represent a simpler method to estimate the funds required to finance growth. Its main limitation is that it provides reasonable estimation only when asset requirements and financing sources can be assumed to be a constant percentage of sales.

2.7 KEYWORDS

Forecasting: It is the word used for prediction, it means predicting the future values based on the past and present events.

Financial Forecasting: Financial forecasting is the process of estimating or predicting the business financial performance.

Sales Forecasts: The sales forecasts represent the firm's estimate of the quantity of the firm's products that the firm expects to sell in the future.

Pro forma financial statements: Pro forma financial statements show the effects and impact of the firm's decisions on its future financial statements.

Sales Budget: It refers to planned sales in units and sales price amount.

2.8 SELF ASSESSMENT TEST

Q.1 What is Financial Forecasting? Explain the approaches to financial forecasting.

Q.2 How does financial forecasting work?

Q.3 How to forecast the Income Statement? Explain it with an example.

Q.4 What makes financial forecasting important to any organization?

Q.5 How Does a Financial Forecast Differ From a Budget Forecast?

Q.6 "Financial Forecasting is not an easy job; it require special knowledge and skills". Justify the statement.

Q.7 What is Financial Planning? How does it differ from financial forecasting?

Q.8 What are the major techniques of financial forecasting?

Q.9 Differentiate:

a. Quantitative Technique of Financial Forecasting and Qualitative Technique of Financial Forecasting

b. Sales Budget and Sales Forecasting

Q.10 Explain the benefits and purpose of financial forecasting.

Q.11 Explains the tools and techniques through which financial forecasting is done.

Q.12 Explain Pro forma Balance sheet with an example.

2.9 ANSWERS TO CHECK YOUR PROGRESS

1. b
2. d

3 c

4 a

5 a

6 d

7. e

8. a

9. a

10. d

2.10 REFERENCES/SUGGESTED READINGS

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Course: **Financial Management**	
Course Code: BC 502	Author: **Dr. Kapil Choudhary**
Lesson No: **3**	Vetter: **Prof. Suresh Kumar Mittal**
FINANCIAL PLANNING	

STRUCTURE

3.0 Learning Objectives
3.1 Introduction to Financial Planning
3.2 Types of Capital Requirement
3.3 Capitalization
3.4 Capital Structure
3.5 Check Your Progress
3.6 Summary
3.7 Keywords
3.8 Self-Assessment Test
3.9 Answers to Check Your Progress
3.10 References/Suggested Readings

3.0 LEARNING OBJECTIVES

After reading this lesson, you should be able to:

- Understand the meaning and nature of financial planning.
- Describe the need of finance planning.
- Know the process of financial planning.
- Identify the factors affecting financial Planning

3.1 INTRODUCTION TO FINANCIAL PLANNING

When an entrepreneur seriously considers the setting up of a new enterprise, he first examines in detail the commercial utilities of the proposed venture and when he is satisfied, he takes all possible steps to give practical shape to the proposal. The most important step is related to financial aspect is to take current decision in respect of the amount of necessary capital and its sources for the operations of the proposed business activity. The businessman has to take this step very carefully because even a little wrong decision may put the enterprise in risk for a longer period. A well-prepared financial plan will not only ensure the procurement of sufficient funds but their proper utilisation also. At the time of promoting a company this function is performed by the promoter but latter on assigned to financial manager.

3.1.1 FINANCIAL PLANNING

Financial planning has been defined by various experts in different senses and with different meanings *i.e.*, narrow concept and broader concept.

In narrow concept, financial planning means the pre-determination of such future financial activities which are to be performed compulsorily for the achievement of objectives of the enterprise. Few experts hold the opinion that financial planning signifies the forecasting of required capital of the enterprise and the determination of its capital structure. But this is a very narrow thought and considers only one aspect of financial planning. Some others have suggested that financial planning has two prime aspects–first, it indicates the capital structure of the enterprise and secondly, it classifies the financial policies adopted by the enterprise.

In the Broader sense, financial planning includes determination of financial goals, formulation of financial policies and development of financial procedures.

According to **Arthur S. Dewing**, the following activities are included in financial planning;

i. Capitalisation *i.e.*, determining the required amount of capital.
ii. Capital structure, *i.e.*, deciding the various sources of capital and their proportion.
iii. Proper Management of capital, *i.e.*, managing the various types of assets.

Walker and Bough also supports the Broader Concept of Financial Planning.

"*Financial Planning pertains only to the function of finance and includes the determination of the firm's objectives formulating and promulgating financial policies and developing financial procedures*."

Financial Plan: A financial plan is a statement estimating the amount of capital and determining the composition. The quantum of funds will depend upon the assets requirements of the business. The time at which funds will be needed should be carefully decided so that finances are raised at a time when these are needed. The next aspect of financial plan is to determine the pattern of financing. There are number of ways for raising funds. The selection of various securities should be done carefully.

Essentials of a Sound Financial Plan

While preparing a financial plan for any business unit, the following aspects should be kept in view so as to ensure the success of such exercise in meeting the organizational objectives.

- **The plan must be simple:** Now-a-days you have a large variety of securities that can be issued to raise capital from the market. But it is considered better to confine to equity shares and simple fixed interest debentures.
- **It must take a long-term view:** While estimating the capital needs of a firm and raising the required funds, a long-term view is necessary. It ensures that the plan fully provides for meeting the capital requirement on long term basis and takes care of the changes in capital requirement from year to year.
- **It must be flexible:** While the financial plan is based on long term view, one may not be able to properly visualise the possible developments in future. Not only that, the firm may also change its plans of expansion for various reasons. Hence, it is very necessary that the financial plan is capable of being adjusted and revised without any difficulty and delay so as to meet the requirements of the changed circumstances.
- **It must ensure optimal use of funds**: The plan should provide for raising reasonable amount of funds. As stated earlier, the business should neither be starved of funds nor have surplus funds. It must be strictly need based and every rupee raised should be effectively utilised. There should be no idle funds.
- **The cost of funds raised should be fully taken into account and kept at the lowest possible level**: It must be ensured that the cost of funds raised is reasonable. The plan should provide for a **financial mix** (combination of debt and equity) that is most economical in terms of cost of capital, otherwise it will adversely affect the return on shareholders' funds.

- **Adequate liquidity must be ensured**: Liquidity refers to the ability of a firm to make available the necessary amount of cash as and when required. It has to be ensured in order to avoid any embarrassment to the management and the loss of goodwill among the investors. In other words, the investment of funds should be so planned that some of these can be converted into cash to meet all possible eventualities.

3.1.2 TYPES OF FINANCIAL PLANNING

- Short-term Financial Planning
- Medium-term Financial Planning
- Long-term Financial Planning

- **Short-term Financial Planning:** Normally plans for one year are included in short-term planning. Such plans are primarily prepared for the management of working capital. These are also known as 'budgeting' or 'profit planning'. These are part of a medium-term and long-term financial plans. The objectives of short-term financial plans are to maintain sufficient liquidity in the business. For making financial plans, various types of budgets such as sales budget, cash budget, projected balance sheet, projected profit and loss statement, funds flow statement and cash flow statement etc. are prepared.
- **Medium-term Financial Planning:** When financial plans are made for more than one year but for less than five years, that is called the process of medium-term financial planning. Medium term financial planning is needed for meeting the needs for the maintenance of assets, asset replacement, conducting Research and Development activities and arrangement of special working capital.
- **Long-term Financial Planning:** Long-term financial planning is concerned with all such financial plans which are made for more than five years. Setting up long-term financial objectives, determining the volume of capitalisation, designing the capital structure, arranging the additional capital for future expansion and reorganisation etc. are included in long-term financial planning.

3.1.3 STEPS IN FINANCIAL PLANNING

- **Establishing Financial Objectives:** The financial objectives of a company should be clearly determined. Both short-term and long-term objectives should be carefully prepared. The main purpose of financial planning should be to utilise financial resources in the best possible manner.

There should be an optimum utilisation of funds. The enterprise should take the advantage of prevailing economic situation.

- **Formulating Financial Policies:** The financial policies of a concern deal with procurement, administration and distribution of business funds in a best possible way. There should be clear-cut plans of raising required funds and their possible uses. The current and future needs for funds should be considered while formulating financial policies.
- **Formulating Procedures:** The policies laid down must be clarified in the form of detailed procedures. Each subordinate must know what he is required to do procedures are essential to ensure the consistency of actions. In financial procedures, financial executives should decide about the control system, establish the standards of performance and compare the actual performance with the standards to ascertain the deviations and their causes. If a policy is to raise short term funds from banks, then a procedure should be laid to approach the lenders and the persons authorised to initiate such actions.
- **Providing for Flexibility:** The financial planning should ensure proper flexibility in objectives, policies and procedures so as to adjust according to changing economic situations. The changing economic environment may offer new opportunities. The business should be able to make use of such situations for the benefit of the concern. A rigid financial planning not let the business use new opportunities.
- **Review of Financial Planning:** From time-to-time financial planning should be reviewed.

3.1.4 FACTORS AFFECTING FINANCIAL PLANNING

- **Nature of the Industry:** The needs for funds for different industries are different. The asset structure, element of seasonality, stability of earnings is not common factors for all industries. These variables will influence determining the size and structure of financial requirements.
- **Risk:** The business which has greater risk needs more owned funds because the business having greater risk has lesser debt funds available. The business involving lower risk can be run with lesser amount of owned capital. Thus, the advantages of 'Trading on Equity' can be achieved.
- **Status and Size of Business:** The status and size of the business unit such as the age of unit, its size its functional area, the reputation and goodwill of the promoters should be considered while

formulating a financial plan. Large size business units require more funds as compared to small size units.

- **Expansion Plans:** Future plans and programmes are also taken into account while preparing the financial plan. If no consideration is given in the initial stage of financial plan, it will be very difficult to adjust it in future.
- **Attitude of Management:** The draft of financial plan is also affected by the attitude of management. Moreover, if the management is of risk taking nature, it would employ more amounts of borrowed funds. On the contrary, if it is of conservative nature it will employ more amount of equity capital.
- **General Economic Conditions:** The prevailing economic conditions at the national level and international level will influence a decision about financial plan. These conditions should be considered before taking any decision about sources of funds. A favourable economic environment will help in raising funds without any difficulty. On the other hand, uncertain economic conditions may make it difficult for even a good concern to raise sufficient funds.
- **Scope of Business:** The amount of capital required for business depends upon the fact, whether the business carries one stage of production or distribution or whole of the task. The business which completes only one stage of production or distribution, they need less amount of capital as compared to this business which complete the whole task.
- **Facility of Lease:** The businesses for which machinery and other fixed assets are available on lease require lesser amount of capital against those businesses which have to purchase them.
- **Government Control:** The govt. policies regarding issue of shares and debentures, payment of dividend and interest rate, entering into foreign collaborations, etc. will influence a financial plan.
- **Availability of Sources:** There are number of sources from which funds can be raised. The pros and cons of all available sources should be properly discussed. The sources should be able to provide sufficient and regular funds to meet needs at various periods. A financial plan should be selected by keeping in view the reliability of various sources.

3.1.5 LIMITATIONS OF FINANCIAL PLANNING

- **Based on Future:** All financial plans are based on the financial forecasts but nothing can be said definitely about the future. If forecasts prove to be biased and full of errors, the financial plans would be ineffective.
- **Lack of Co-ordination:** If executives responsible for successful implementation of financial plan do not function with mutual co-operation and co-ordination, the financial plan would fail.
- **Rigid Financial Plan:** In practice, financial management is found to be rigid towards financial plan and is not ready to incorporate timely changes in it. In such a case, financial plan tends to be ineffective.

3.2 TYPES OF CAPITAL REQUIREMENT

The capital requirement of any business unit can be broadly divided into two categories:

(a) Fixed capital requirement

(b) Working capital requirement.

In order to ascertain the amounts of such requirements for any business, one must understand the exact nature of fixed and working capitals and also the various factors that influence their requirement.

(a) Fixed Capital: Fixed capital represents the requirement of capital for meeting the permanent or long-term financial needs of the business. It is primarily used for acquiring the fixed assets like land and buildings, plant and machinery, office equipment, furniture and fixtures etc. Fixed capital is required not only while establishing a new enterprise but also for meeting expansion requirement in the existing enterprises. The amount of such requirement can be assessed by preparing a list of fixed assets needed by the business unit and ascertaining their prices from the market. It may be noted that investment in fixed assets is a long-term commitment and the amount so invested cannot be withdrawn quickly. Hence, the funds for such requirement are always provided from owners' fund or raised by issuing shares and debentures and taking long-term loans from financial institutions.

Factors Determining Fixed Capital Requirement

In order to assess the fixed capital requirement for any business enterprise, one must be fully conversant with the factors that influence such requirement. These factors are summarised as follows:

- **Nature of business:** The amount of fixed capital requirement is determined primarily by the nature of business the firm is engaged in. Such requirement, for example, is very large in case of

industrial establishments, shipping companies, public utilities, etc. which involve heavy investment in plant and machinery. The trading concerns (wholesalers and retailers) do not require much investment in the fixed assets.

- **Type of products:** It is not only the nature of business which determines the requirement of fixed capital but also the type of product involved. A firm manufacturing simple products like soap, toothpaste, stationery, etc. requires small amount of fixed capital as against the firm's producing items like steel, cement, automobiles, etc.
- **Size of business:** A firm working on a large scale requires heavy investment in fixed assets as it has to establish large production capacity. Hence, its fixed capital requirement is larger than a firm which is operating on a small scale.
- **Process of Production:** A firm which goes in for an automatic plant requires larger amount of fixed capital as compared to the firm which selects semi-automatic plant or depends more on manual labour for production of goods. Similarly, if a firm decides to buy most of the components needed for its products from the market rather than producing these in its own factory, it would need less fixed capital as compared to the one which manufactures each component (part) on its own. This is especially true of those automobile and machinery producers who simply act as assembling units.
- **Method of acquiring fixed assets:** The fixed assets, especially machinery and equipment, can be acquired either on cash basis (instant payment) or on instalments leasing basis. Apparently, a firm which acquires such assets on cash basis needs larger amount of fixed capital as compared to the firm which decides to acquire it on instalment or lease basis.

(b) Working Capital

Working Capital represents the amount of funds invested in current assets like debtors, stock-in-trade and cash required for meeting day-to-day expenses, paying wages/salaries to its work-force and clearing dues of its creditors. It is also known as circulating capital because most of the amount invested in current assets is continuously recovered through realisations of debtors and cash sale of goods, and is reinvested in current assets. It keeps on revolving from cash to current assets and back again to cash as shown in the working capital cycle here. It should be noted that a part of working capital is of a permanent nature because depending on the volume of business certain amount of cash, debtors and stock-in-trade shall

always be maintained by every firm. This part of working capital is known as permanent or fixed working capital and must always be financed through long-term sources. The remaining part of the working capital requirement varies from period to period on account of fluctuations in the volume of business and is called fluctuating or variable working capital. This part of working capital is usually financed through short-term sources like bank overdraft, trade creditors, bills payable etc.

Factors determining working capital requirement

Adequate working capital is very necessary for maintenance of liquidity and running the business smoothly and efficiently. However, the amount of working capital required varies from business to business and from period to period. The various factors that influence such requirement are as follows:

- **Nature of business:** The working capital requirement of the manufacturing companies is usually high as they require huge stock-in-trade (inventories) and the amount of their debtors is also expected to be large because of the credit sales involved. As against this, the public utilities like electricity and telephone companies and the concerns like hotels, restaurants, etc. can manage with small amount of working capital as most of their transactions are undertaken on cash basis and their inventory needs are low.
- **Size of business:** The size or volume of business plays a major role in determining the amount of working capital requirement of every firm. Obviously, larger the volume of business, larger would be the amount of working capital need. This is because, as their inventory requirement will be large and so also the amount of their debtors.
- **Length of production cycle:** Length of production cycle refers to the time period involved in converting raw-material into finished goods. Longer the length of such period, larger will be the requirement of working capital and vice versa. The length of production cycle, however, depends upon the type of product being manufactured and the nature of technology used. For example, in case of products like cars and cotton textiles, the production cycle is much longer than in case of items like stationery, detergents, etc. Therefore, working capital requirement is large for car companies and textile mills. Similarly, the firms using updated technology may have shorter production cycles and hence their requirement of working capital may not be large.
- **Inventory turnover rate:** Inventory turnover rate refers to the speed at, or the time period within which finished stock is converted into sales. There is a high degree of correlation between the

amount of working capital required and the inventory turnover rate. A firm having high inventory turnover rate needs less working capital as against a firm which has low inventory turnover rate. It is so because the firm with high rate can manage with less investment in stock. Take the case of a retailer dealing in fast moving items like groceries and cosmetics with a high turnover rate. Its investment in stock is bound to be much less than retailer who is dealing in slow moving items like readymade garments or electronics goods.

- **Credit policy:** The firms which provide liberal credit facility to their customers need more working capital as compared to those firms which observe strict credit terms and are efficient in realisation of their debts. It is so because when customers enjoy longer period of credit, a larger amount of firm's funds get tied up with debtors. This results in higher requirement of working capital. However, if such a firm also enjoys liberal credit facility from its suppliers, it can manage with lower amount of working capital. But this may not be true in all cases.
- **Seasonal Fluctuations:** The firms that are engaged in manufacturing products like ceiling fans or woollen garments, the demand of which is limited to a specific period of the year, require higher amount of working capital not only during the peak period but also during off season. This is so because they may be left with a good amount of unsold goods which is kept in stock for sale during the next season. There is no denying the fact that the firms dealing in consumer durables or items involving long production period or wide seasonal fluctuations require large amount of working capital. But, with proper planning and efficient management of inventories and debt collection exercise, the firms can drastically reduce their working capital requirement.

3.3 CAPITALIZATION

The term capitalisation has various meanings. In common parlance, it refers to the amount at which a company is valued based on its capital employed. Some of the experts on finance used this concept in a narrower sense and defined it as the par value of a company's shares and debentures, while some of them interpreted it as the par value of its total long-term funds which includes owners fund, borrowed funds, reserves and surplus earnings. In the context of financial planning however, it refers to the process of determining the amount of capital required by a company. The capital estimation is arrived at by using the following two theories. (a) Cost theory

(b) Earning theory.

Let us have a brief about these two theories.

(a) Cost Theory: According to the cost theory of capitalisation, the amount of capital required by the company is calculated by adding up the cost of its fixed assets, the amount of its working capital and the cost of establishing the business. This approach is simple and used widely in case of new companies.

(b) Earning Theory: According to earning theory, the capital requirement of a company is calculated on the basis of the capitalised value of its earning. For example, if the average annual earning of a company is Rs. 5 lakh and the normal rate of return on the capital employed in case of companies in the same industry is 10%, then the amount of capitalisation is Rs. 50 lakhs. For a new company the amount of capitalisation is calculated on the basis of its estimated earnings. For example, if a new company expects to earn an average annual income of Rs. 3 lakh and the normal rate of return of the industry is 5%, then the amount of capitalisation or the quantum of fund it would require to run the business is Rs. 60 lakhs. This approach of capitalisation is considered more rational and relevant because it helps in evaluating as to how far the actual capital employed is justified by the earning of the company. If the actual rate of return is same as the normal rate of return, then it is said to be proper capitalised. But in real sense, a company may be either over capitalised or undercapitalised that means the actual rate of return may be less or more than the normal rate of return. Let us know in detail about the concept of over-capitalisation and under-capitalisation in the next section.

3.3.1 OVER-CAPITALIZATION

A company is said to be over-capitalised if its capital employed is more than its proper capitalisation. For example, if a company's average annual earnings isRs.2,00,000 and the normal rate of return is 10%. Then its proper capitalisation isRs.20,00,000. Now, if the actual capital employed (total long-term funds) is Rs.25,00,000 it will be treated as over-capitalised. You can also put it in another simpler way i.e., if a company's actual rate of earnings is less than the normal rate of return, it is treated as a case of over-capitalisation. In the above example, the company's actual rate of earnings works out as 8%, which is less than the normal rate of return i.e., 10%. So, it is considered as over-capitalised and the company is not in a position to pay interest and dividends at a fair rate. Such a situation may because by the following factors:

- Excessively high price paid for the purchase of goodwill and other fixed assets.

- Underutilization of production capacity.
- Raising more capital in the form of shares and debentures than required.
- Liberal dividend policy.
- Higher rate of corporate taxation.
- Underestimation of capitalisation rate or overestimation of earnings while deciding on the amount of capital to be raised.

Over-capitalisation is not desirable in the long run interest of the shareholders and the company. It leads to lower rate of dividend, reduction in the market value of shares and difficulty in raising more funds. Hence, there is need to rectify such situation as quickly as possible by reducing debt, efficient utilisation of assets, and by following a conservative dividend policy.

3.3.2 UNDER-CAPITALISATION

Under-capitalisation is just the reverse of over-capitalisation. In other words, a company is said to be under-capitalised if its capital employed is less than its proper capitalization. The amount of capital invested is not justified by its annual earnings. In the earlier case, for example, if the company's actual capital employed is Rs. 16,00,000 it shall be treated as under-capitalised as it is less than Rs. 20,00,000, the proper capitalisation. Alternatively, if a company's actual rate of earnings is more than the normal rate of return, it is treated as a case of under-capitalisation. This does not imply that the company suffers from inadequacy of capital. In fact, such a situation may be the result of underestimation of expected earnings while deciding on the amount of capital to be raised or using low capitalisation rate for the purpose or by following a conservative dividend policy. Of course, improvement in earnings can also be the result of cost reduction exercise or high efficiency. Thus, under-capitalisation is indicative of a sound financial position and may lead to increase in the market value of company's shares. However, it can encourage competition as high rate of return may attract new entrants in the field. The workers of the company may demand for higher wages and other benefits. When the company earns more profit, the customers may feel that they are being over-charged by the company. So, it is better to take corrective steps like capitalisation of profits (issue bonus shares) or splitting up of the shares (a share of Rs.10 may be converted into five shares of Rs. 2 each). Although undercapitalisation is considered a lesser evil than over-capitalisation (as the situation can be remedied more quickly) it is better to ensure a fair or proper capitalization.

3.4 CAPITAL STRUCTURE

The financial requirement of a firm can be met through ownership capital and/or borrowed capital. The ownership capital refers to the amount of capital contributed by the owners. In case of a company, it refers to the amount of funds raised by issuing shares. The main characteristic of the ownership capital is that its contributors are entitled to get dividend out of earnings after the payment of interest and taxes. Hence, the rate of return on such capital depends upon the level of profits earned, and, if there are no profits, no dividend may be paid. Borrowed capital, on the other hand, refers to the amount of funds raised through long term loans and debentures on which its contributors are entitled to a fixed rate of interest which has to be paid at regular intervals (half-yearly or yearly) irrespective of the profits earned. There is also a commitment that the principal amount shall be repaid on maturity. However, it is still considered advantageous to finance business activities through borrowed capital because if the rate of earnings from the planned business investment is expected to be better than the rate of interest on the borrowed funds, it shall ensure higher returns on owners' funds. most companies generally plan to raise the required amount of long-term funds by using a judicious mix of ownership capital (called equity) and borrowed capital (called debt). The mix of equity and debt actually used by a company for meeting its requirement of capital is known as its capital structure. Thus, the term capital structure refers to the make-up of a firm's capital in terms of the planned mix of different kinds of long-term funds like equity shares, preference shares, debentures and long-term funds.

3.4.1 FACTORS DETERMINING THE CAPITAL STRUCTURE

The mix of debt and equity used (called the capital structure) for meeting the capital requirements of a company affects the rate of return on owners 'capital (shareholders' funds). This in turn, determines the earnings per equity share (EPS) and has its effect on the market value of company's shares. Hence, the choice of an appropriate capital structure becomes a very important decision for the finance manager of any company. He should make this decision on the basis of reliable data and after careful analysis of all the factors that influence this choice. Following are the factors that should be kept in view while deciding on the choice of an appropriate capital structure:

- **Expected earnings and their stability:** If the expected earnings, in terms of rate of return on the amount to be invested are sufficiently large, use of debt is considered quite desirable. Not only that, the stability of earnings should also be taken into account because if the firm is engaged is

business activities in which sales and profits are subject to wide fluctuations, it will be risky to use higher proportion of debt. In other words, if there is an element of uncertainty about the expected earnings it is considered better to rely more on equity share capital. However, with assured prospects of rising earnings, there should be greater reliance on debt so as to take advantage of leverage effect.

- **Cost of debt:** If the rate of interest on borrowings is lower than the expected rate of return on capital employed, then debt may be preferred. With lower cost of debt financing, the overall cost of financing is reduced and the return on equity capital will be higher, as explained earlier.
- **Right to manage the business:** You know that the debenture holders and preference shareholders do not have much say in management of the company. This authority lies primarily with the equity shareholders who have the voting rights. Hence, while deciding on the mix of equity and debt, the promoters/existing management of the company may also take into account the possible effect of raising funds through equity shares on the right to control the business. In order to retain their right to control the affairs of the company, they may prefer to raise additional funds mainly through debentures and preference shares.
- **Capital market conditions:** The conditions in the capital market also influence the capital structure decision. At times capital market is so depressed that the investors are unwilling to subscribe to shares. In such a situation, it is considered better to rely on debt or defer the decision till a favourable market condition is restored.
- **Regulatory norms:** While deciding on the capital structure, the legal constraints like the limit on debt-equity ratio should also be kept in view. At present, such limit is 2:1 in most cases. This implies that at any point of time, the debt should not be more than twice the amount of share capital. This limit keeps on changing with changing economic environment and varies from industry to industry.
- **Flexibility:** The planned capital structure should be flexible enough to raise additional funds without much difficulty. The company should be able to raise additional capital in the form of debt or equity whenever required. But if the company's capital structure has too much debt, then the lenders may not be able to give more loan to the company. In a such a situation it may be forced to raise the funds only through shares for which the capital market condition may not be

conducive. Similarly, when on account of declining business and lack of other investment opportunities the funds need to be refunded, it may not be possible to do so if the company has heavily relied on equity shares which cannot be redeemed easily. Hence, to ensure an element of flexibility, it is better if the firm relies more on redeemable securities that can be paid off if necessary and, at the same time, have some unused debt raising capacity so that future financial needs can be fully taken care of without much difficulty.

- **Investors' attitude towards investment:** While planning the capital structure of a company one must bear in mind that all investors do not have the same attitude towards their investment. Some are highly conservative who prefer safety to return. For such investors, debentures are considered most suitable. As against this, there are some who are interested in high return on their investments and are ready to take the risk involved. Such investors prefer equity shares. Then, there are many who are willing to take a limited risk provided the return is better than the rate on secured debentures and bonds. Preference shares are most suitable for this category of investors. In order to attract all categories of investors, it is considered more desirable to issue different types of securities specially when the amount of capital requirement is large. Looking at the above considerations, it can be safely concluded that an appropriate capital structure is one which:

  (a) Ensures maximum return on equity by making use of the leverage effect within reasonable limits of the risk involved;

  (b) caters to all types of investors by using a judicious mix of different types of securities;

  (c) has the necessary flexibility to make required reduction or addition to funds, according to changed conditions;

  (d) Involves minimum risk of dilution in control of the company affairs by the existing group of shareholders; and

  (e) Fully keeps in view the legal constraints and the prevailing capital market conditions. To sum up, the most judicious capital structure is one that minimises the cost of funds and maximises the shareholders wealth. In financial management terminology, such a capital structure is called optimal capital structure.

3.5 CHECK YOUR PROGRESS

1. Which of the following are not the essential characteristics of financial planning?

(a) Simplicity

(b) Liquidity

(c) Abundant availability of funds

(d) Flexibility

(e) Concentration on long term needs only

(f) Economy

2. State whether the following are objectives of financial planning, by writing 'Yes' or 'No'.

(a) Determining the requirement of fixed and working capital. ( )

(b) Determining the sales output. ( )

(c) To ensure the timely availability of funds. ( )

(d) To determine the quantity of production. ( )

(e) To raise funds at the lowest possible cost. ( )

3. State whether we require 'more' or 'less' working capital in the following cases:

(a) A company manufacturing Iron & steel. ( )

(b) A bread manufacturing company having high inventory turnover. ( )

(c) A large size business enterprise making toys. ( )

(d) A company manufacturing furniture against orders only. ( )

(e) A company manufacturing of coolers/refrigerators. ( )

4. Match the items in column A with column B.

1.	Fixed capital	(i) Short term finance
2.	Public utilities	(ii) Working capital requirement
3.	Permanent working capital	(iii) Long-term finance
4.	Goodwill	(iv) Telephone company
5.	Fluctuating working capital	(v) Intangible fixed asset
6.	Length of production cycle	(vi) Fixed working capital

5. Which of the following are characteristics of an appropriate capital structure? Indicate, by writing YES or NO in the space provided. Rewrite the statements where your answers is NO.

(a) It involves a judicious mix of different types of securities. ( )

(b) It involves dilution of control of existing shareholders. ( )

(c) It caters to exclusively to the wealthy investors. ( )

(d) It ensures minimum return on equity. ( )

(e) It keeps in view the legal constraints. ( )

(f) It has rigidity and firmness and does not change with changed conditions. ( )

3.6 SUMMARY

Determining the pattern of financing and formulating financial policies and procedures is termed as 'Financial planning'. To achieve the objectives of financial planning effectively, it must be ensured that the financial plan is simple, takes a long-term view, has the necessary flexibility to meet changing financial needs of the organisation, provides for reasonable amount at the lowest possible cost, and takes care of the liquidity requirement of the company.

The firm's capital requirement can be broadly divided into fixed capital and working capital requirements. Fixed capital represents the requirement of capital for permanent or long-term financial needs of the business. Such requirement depends upon the nature of business, size of business, product involved, type of production process adopted, method of acquiring the fixed assets such as cash basis, instillment payment method or lease basis. Working capital represents the amount of funds required for financing current assets. A part of the working capital requirement is of a permanent/fixed nature which has to be funded through long-term sources. But the major part of working capital is fluctuating in nature which varies with fluctuations in the volume of business from time to time and is funded through short term sources like bank overdraft, suppliers' credit, etc. The working capital requirement is determined by the nature of business, size of business, length of production cycle, inventory turnover rate, firm's credit policy for its customers and seasonal fluctuations. The term 'capitalisation' is used in various contexts Actual capital employed by a firm must be justified by its annual earnings. If itis found that the actual capital employed is more than what is justified by its earnings, the firm is said to be over-capitalised and if, on the other hand, it is less than the amount as justified by its earnings it is treated as a case of undercapitalisation. Another measure of assessing whether a firm is over-capitalised or under-capitalised lies in comparing the actual rate of return on capital employed with the normal rate of return based on industry's average earnings. The firms normally use a judicious mix of debt and equity in order to ensure a higher return on owners' funds. Such a mix is termed as the 'Capital structure' of the firm. The choice of an appropriate capital structure is determined by a host of factors. They are: (1) expected earnings and

their stability, (2) cost of debt, (3) effect on right to control, (4) capital market, (5) regulatory norms, (6) flexibility, and (7) investors' attitude towards investment.

3.7 KEYWORDS

Financial Planning: Financial planning means the pre-determination of such future financial activities which are to be performed compulsorily for the achievement of objectives of the enterprise.

Capitalization: Capitalization means determining the required amount of capital.

Capital Structure: Capital Structure refers to deciding the various sources of capital and their proportion.

Financial Plan: A financial plan is a statement estimating the amount of capital and determining the composition.

Fixed Capital: Fixed capital represents the requirement of capital for meeting the permanent or long-term financial needs of the business.

Working Capital: It represents the amount of funds invested in current assets like debtors, stock-in-trade and cash required for meeting day-to-day expenses, paying wages/salaries to its work-force and clearing dues of its creditors.

3.8 SELF-ASSESSMENT TEST

Q.1 What is the meaning of financial planning? What are its objectives? Explain the characteristics of a sound financial plan.

Q.2 "Financial planning is the key to successful business operations." Comment on this statement highlighting the importance and limitations of financial planning.

Q.3 What are the factors affecting financial planning? What steps should be taken in financial planning?

Q.4 What considerations would you keep in mind while drafting a financial plan for on industrial enterprise? What are the limitations of such plans?

Q.5 How will you determine the financial requirements of a business? Explain.

Q.6 Write short notes on:

(*i*) Characteristics of Sound Financial Plan

(*ii*) Financial Planning – Meaning and Purpose

Q.7 What do you mean by financial planning? From the point of view of financial management what are the basic differences between long term and short term financial planning?

Q.8 What is Financial Planning? What are its features? Discuss the process of estimating long-term financial needs of a company.

3.9 ANSWERS TO CHECK YOUR PROGRESS

1. (*c*) and (e)
2. a. Yes
   b. No
   c. Yes
   d. No
   e. Yes
3. a. More
   b. Less
   c. More
   d. Less
   e. More
4. a. (iii)
   b. (iv)
   c. (vi)
   d. (v)
   e. (i)
   f. (ii)
5. (a) Yes
   (b) No It involves minimum risk of dilution in control by existing shareholders.
   (c) No It caters to all types of investors
   (d) No It ensures maximum return on equity
   (e) Yes
   (f) No It has the necessary flexibility to make required reduction or addition to funds, according to changed conditions.

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Subject: Financial Management	
Course Code: BC 502	**SLM Conversion By:** Ms. Chand Kiran
Lesson No.: 4	

SOURCES OF FINANCE

STRUCTURE

4.0 Learning Objectives
4.1 Introduction
4.2 Sources of Long-term Finance
  4.2.1 Shares and Stock
  4.2.2 Debentures
  4.2.3 Retained Earnings
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4.0 LEARNING OBJECTIVES

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

- Describe the various long-term sources of finance.
- Identify the different sources of medium-term financing.
- Discuss the various short-term sources of finance.

4.1 INTRODUCTION

The Financial Manager has to assemble funds from a variety of sources to satisfy varied financial needs of the firm. Some capital is provided by the suppliers, creditors, and owners, while other funds arise from earnings retained in the business. A firm needs long-term funds to purchase fixed assets and to carry a portion of current assets as permanent investment in fixed assets to ensure smooth flow of business activity. A firm needs medium term funds for a period of three to five years for financing aggressive advertising campaign and for complete overhauling of its machines and equipment's. The short-term funds are also needed to meet the day-to-day business needs. Among these different types of capital requirements, funds needed for acquiring fixed assets are of considerable importance because the funds have to be arranged for a long period. The business firm procures funds from external as well as internal sources. The finance manager procures funds from external sources to float new ventures and to expand existing ones. The firm approaches the general investing public, government and financial institutions for the purpose. In the present lesson we shall explain the nature and characteristics of financial instruments, viz., equity shares, preference shares and debentures and their respective implications for long term financing of business. We shall also describe briefly medium and short term sources of finance.

4.2 SOURCES OF LONG-TERM FINANCE

Long-term funds are needed by the firm either to replace existing capital assets or to add to its existing capacity or both. The nature of long-term funds is static and permanent. As a matter of fact, it is this capital which bears the ultimate risk of the business. That is why, a major portion of long-term capital is collected through the sale for equity shares, preference shares, and obtaining long-term loans. Equity shares constitute the most important source of funds to a new business, and provide basic support for existing firm's borrowing. After sometime, the retained earnings may also become a good source of a firm's long-term requirements of funds. When long-term needs are not fully met through shares, the long-term loans are also utilized. So the real bases for division of fund requirements are the time, conditions of its use, and the degree of risk attached to it. If management gets ample time to plan and provide for the repayment of funds, and if management can appropriate these funds for a very long time, it must be included in long-term financing no matter whether it is ownership claim or a creditor ship claim. Now, we will discuss these sources in somewhat detail.

4.2.1 SHARES AND STOCKS

Shares are the universal and typical form of long-term capital raised through capital market. All companies (except companies limited by guarantee) have statutory right to issue shares to raise capital after incorporating provisions thereof in the capital clause of the Memorandum of Association. Capital procured by issue of shares is termed as 'Ownership Capital'.

In simple words, share is a specific portion of capital which, in turn, refers to the amount of money raised by issue of shares. According to Justice Lindley, "The common stocks (contributed by members) is denoted in money and is the capital of the company, the persons who contributed it or to whom it belongs are members. The proportion of capital to which each member is entitled is his share". Section 2 (46) of Indian Companies Act, 1956, has defined a share as "a share in the share capital of a company, and, includes stock except, where a distinction between stock and share is not expressed or implied". A word may be said here about the 'stock' of a company. "When shares have been fully paid up they may, if so authorized by the articles, be turned into stock by the company in general meeting" [Sec. 94 (i) c]. Stock has no face value and stock is not divided in equal shares or parts and dividends are not numbered but it may be divided into any amount. Thus, a shareholder may hold ₹ 100 worth of stock though his shares had originally been worth ₹1000/- each. However, the Registrar must be given the notice of the conversion of paid-up shares into stock (Section 95). Thus, stock is merely a name for the aggregate ownership of a company which is divided into a number of units, each unit is called share. After the allotment of shares of a company the shareholders are given a certificate with regard to their shares, which is called share certificate.

Features of Shares and Stocks: The financial manager must be well-versed with the different characteristics of shares and stocks since these have bearing on the interests of the company and the shareholders, therefore, now we shall discuss the main characteristics of shares.

(a) Permanent capital of Company: Shares bring in permanent capital which the financial manager can utilize during the whole life of the company. The financial manager need not bother for refunding the share capital to the owners. The company and shareholders have no such contractual agreement with respect to refund of capital. The shareholders may only get back their capital after the company is liquidated. In addition to this, the residual left after meeting all the obligations is returned to shareholders. But it should be noted that for shareholders it is not always a permanent investment. A shareholder can get back his money invested in the company. He can do so by selling his shares to others, as he is

authorised to transfer shares under the Companies Act, 1956. But, it may constitute permanent investment for those who want to retain shares for the whole life of the company.

(b) No fixed Charge on the Company: The shares do not involve any fixed charge, nor the company is under obligation to pay dividends. The company has to pay dividends only if it has sufficient profits to do so. The company may even use whole of its earnings for reinvestment and shareholders have no right to object or interfere. The company seeking share capital has not to mortgage its assets for acquiring share capital.

(**c) Shareholders are owners of the Company:** Stockholders become owner of the company. The company gives voting rights to the shareholders. For the administration of the company directors are appointed by the share-owners of the company. But their liability (in case of limited companies) is limited to the part value of shares held by them. Liability is unlimited in case of unlimited company.

A company can issue only two kinds of shares, viz., (i) Preference Shares and (ii) Equity Shares. We shall now discuss the characteristics of these two types of shares separately and examine their significance as source of finance.

4.2.1.1 PREFERENCE SHARES

As the name implies, preference shares are those share which carry preferential right and privileges with respect to income and assets over equity stock. Section 85 of the Indian Companies Act, 1956 defines preference share as the one which fulfils the following two conditions:

i. It will carry a preferential right in the payment of dividends over equity stock, either free or subject to income tax, and
ii. In the re-payment of capital, at the time of winding it will carry or it carries a preferential right irrespective whether there is a preferential right to the payment of any money in respect of dividends remaining unpaid upto the date of such winding up or repayment of capital or any amount of premium specified in the memorandum or articles of association of the company or both. In the absence of any special qualification, preferred stock carries the same rights as equity stock.

We see that preferred stock is a hybrid form of financing, combining features of debt and common stock. In the event of liquidation, a preference shareholder's claim on assets comes after that of creditors but before that of common stockholders. Usually this claim is restricted to the par value of the

stock. The maximum return to preferred stockholders is usually limited to the specified dividend, and these shareholders ordinarily do not share in the residual earnings of the company.

Features of Preference Shares

Following are the features of preference shares:

(a) Claims of Income: Preferred stockholders have priority of claim to dividend over equity stockholders. They are paid dividend at a fixed rate specified in the agreement. Only after payment of stipulated dividend to preferred stock holders can the company distribute earnings among equity stockholders. However, the stockholders have no legal recourse against the company for not distributing dividend even though it has earned a large income. Distribution of income is the prerogative of the Board of Directors who can decide whether to pay dividends or to reinvest its earnings wholly. But once the dividend is declared, preferred stockholders must be paid first in accordance with the agreement before any distribution to the residual stockholders. However, the claim of the preferred stockholders unlike equity stockholders is fixed for all time to come and does not change in correspondence with variation in level of earnings. They have no right to share in extra earnings. Occasionally, however, a participating feature is inserted in the preferred stock which gives the stockholder a right to participate in the balance of profits in an agreed proportion along with equity stockholders whose claims are first met on reasonable grounds. Stocks carrying participating features are known as "Participating Preferred Stocks". The formula for participation varies from case to case. In the case of "Non-Participating Stocks", they are entitled only to fixed rate of dividend in preference to equity stockholders but they do not share in additional return. It may be noted that in the absence of any specific right to participate in the surplus profits, preference shares are presumed to be non-participating.

(b) Cumulative Dividends: Almost all preferred stocks have a cumulative feature, providing for unpaid dividends in any one year to be carried forward. Before the company can pay a dividend on its common stock, it must pay the dividends in arrears on its preferred stock. If the terms of issue of such shares are silent on this point or the Articles of the company makes no provision concerning whether the preferred stock dividend is to be cumulative, preference shares are presumed to be cumulative. The cumulative feature is beneficial to the shareholders, but the company suffers. It experiences much problem in selling additional ordinary shares if it fails to clear arrears on preferred stock.

(c) Preference to Assets: In the event of liquidation of the firm, the preferred stockholders occupy a middle ground between creditors and common stockholders. After the assets are liquidated, the bondholders are paid first. If any money is left, the preferred shareholders are paid second. If money is still remaining, it is shared by the holders of junior security, the common shareholders.

(d) Basically a Fixed Return: The maximum return on preferred stock is usually limited to the stated dividend. Thus, a 12% preferred share of ₹ 100 each will return no more than ₹ 12 per share per year. In some cases the preferred stock contains a participating feature that allows the holder to share in earnings above some specific point. As an example, a participating feature may state that, if the common stock dividend is greater than ₹ 2 per share, the preferred stockholders will share equally in the additional dividends.

(e) Maturity: Most preferred stock issues have no maturity. It therefore brings in permanent capital. Frequently, provision for retirement of stock is made by call or redemption feature in preference stock. This gives an option to the company of redeeming or buying back the stock from the stockholders under the terms and conditions specified in the Articles of Association. These types of shares are called redeemable preference shares. The right of redemption rests with the company only, no shareholder compels the company for redemption of their shares.

More often than not, conversion feature is incorporated in preferred stock to provide and added inducement to buy such stock. The conversion privilege permits the holder to convert his stock into common stock. It must be remembered that this privilege is exercised almost without exception wholly at the option of the stockholders. Such type of preferred stock is known as "Convertible Preferred Stock". Conversion price is clearly spelt out in the Articles of Association. It is usually expressed in terms of share. For example, one preferred share will be exchanged for two common shares.

(f) Controlling Power: Most preferred stock does not contain provisions to allow its shareholders to vote or have other voices in the management of the company. However, under the companies Act, 1956 (Sec. 87) preference shareholders have been given right to vote on resolutions which directly affect the rights attached to his preference shares and in this connection, any resolution for winding up the company or reduction of its share capital is to be regarded as directly affecting the rights attached to the preference shares. Some other provisions for voting are also found.

Evaluation of Preferred Shares as a Source of Corporate Finance

In context of the above discussions, we may now appraise of preference shares. One of the principal drawbacks to its use is the fact that the preferred dividend is not tax deductible. No-deductibility of preferred stock dividend for taxation purpose makes cost differential between preferred stock and bond much greater. Even if dividend rate on preferred stock is equal to bond interest rate, effective cost of the former will be higher by 40 per cent (if company is in the tax bracket of 40%) relative to debt. This tax factor has, therefore, limited the potentiality of the preferred stock as the source of finance.

Fixed dividend rate provision on the preferred stock has reduced the utility of this kind of security particularly for company earning less than the dividend rate because that will reduce returns to the residual owners. This is why residual owners are mostly indifferent to issuance of this stock.

However, the advantage of preference-stock financing is that it is a flexible financing arrangement; the dividend is not a legal obligation of the corporation issuing the securities. If earnings turn bad and the financial condition of the company deteriorates, the dividend can be omitted. To be sure, companies that are accustomed to paying dividends on their common stock certainly regard the preferred dividend as a fixed obligation. Nevertheless, under dire circumstances, a company that omits its common stock dividend can also omit its preferred dividend.

Further significance of preferred-stock is that it brings in permanent capital without involving the company in fixed obligation and without creating any charge against its assets. Though dividend payable on preferred stock is fixed, but that does not mean that the management is forced to distribute dividends to the stockholders. Thus, a new and expanding concern needing larger funds for expansion purposes may find it more convenient to raise funds through the preferred stocks.

Another benefit of the preferred stock is that it provides flexibility to the capital structure of the company. By issuing redeemable preference shares, the manager can keep the door of the company open for alternative sources of funds for further financing. Preference shares capital also helps the management to keep controlling power of the current stockholders in fact.

Managerial Issues

So as to decide whether to issue preferred stock, the financial manager should take into account the pros and cons of the stock and financial conditions of the enterprise. Where levels of sales and income of the enterprise have been relatively unstable in the past but on an average earning rate is higher than what is promised on the preferred stock, it will be in the interest of the enterprise to issue preferred stock,

Furthermore, if the firm does not have sufficient fixed assets to offer as security for acquiring funds, preferred stock financing would be of considerable use.

The use of this stock will be strongly favoured if the use of debt entails the risk of insolvency in the enterprise and issuance of common stock poses a threat of parting control with new equity stockholders.

The cost factor should also receive the attention of the management. While the cost of preferred stock is likely to be lower than that of the common stock, the use of preferred stock is conditioned essentially by the prevailing interest rates. Therefore, the current interest rates should be compared with the average dividend rates on common stock to take a decision.

4.2.1.2 EQUITY SHARES

The equity stockholders of a corporation are its residual owners; collectively, they own the company and assume the ultimate risk associated with ownership. Their liability, however, is restricted to the amount of their investment. In the event of liquidation, these stockholders have residual claim on the assets of the company after the claims of all creditors and preferred stockholders are settled in full. Common stock, like preferred stock, has no maturity date, and stockholders can liquidate their investments by selling their stocks in the secondary market.

Features of Equity shares

The features of equity shares are as follows:

(a) Maturity: Equity capital is the permanent capital for the company. Company has no contractual obligation to repayment of capital during its working life. The shareholders have a right of demanding refund of their capital only at the time of liquidation of the company and that too when funds are left after meeting all prior claims. The shareholders cannot be compelled by a company to sell back their shares if they were fully paid-up and the shareholders not engaged in competitive business to the business of the company.

(b) Right to Income: Common stockholder's claim on income arises only when claims of creditors and preference shareholders have been met. If the income of the company is sufficient only to meet the claims of the creditors, then equity stockholders will get nothing. More than this is that, if a company has adequate earnings left after covering all obligations, the common stockholders can't compel the company to pay dividends to them. The Directors of the company have full right to utilize the earnings in whatever

manner they like. Only if the management, the board of directors, or both are engaged in fraud may stockholders take their case to the court and possibly force the management to pay dividends.

(c) Voting Power: The common stockholders being the owner of the company, they are entitled to elect a board of directors. The board, in turn, selects the management which actually controls the operations of the company. In a proprietorship, partnership firm and a small corporation, the owners directly control the operations of the business. But in a large corporation, the owners have an indirect control over the affairs of the company. Outside stockholders have the right to expect that the directors will administer the affairs of the corporation properly on their behalf.

(d) Right to examine books: A stockholder is legally entitled to inspect the books and records of a corporation. This access is limited, for most companies feel that the audited financial statement is sufficient to satisfy the requirement.

(e) Pre-emptive right: Under a pre-emptive right, existing common stockholders have the right to preserve their proportionate ownership in the corporation. If the corporation issues additional common stock. They must be given the right to subscribe to the new stock so that they maintain their pro-rata interest in the company. The objective of the pre-emptive right is to safeguard the interest of existing stockholders.

Evaluation of Equity Stock as a Source of Corporate Finance

Equity stock is the most potent source of financing that provides substantially large amount of funds without involving the company and the management in any fixed obligations. The management is left free to utilise the funds so raised without being bothered to repay them to their owners till the business of the enterprise continues. Further, the manager is under no statutory obligation to distribute earnings as dividends to the stockholders. They can reinvest business income entirely and the stockholders have no legal recourse to compel the management to pay dividend. Furthermore, the company need not mortgage any portion of its assets to secure equity share capital.

Equity stock facilitates the company to reap the benefits of leverage by taking recourse to debt which is the cheapest source of finance. Creditors are desirous of investing in debentures of a company with a considerable amount of equity capital because it provides a Cushion to absorb and loss. Accordingly, a company with a tidy amount of equity share capital experiences no problem in raising

long-term loan capital at convenient terms and conditions. In sum, it strengthens the credit capacity of the company.

The management in a company with an all equity stock structure has complete discretion in distributing as much of the earnings in dividends as it wishes. Since the company is under no legal obligation to pay dividends to the shareholders, the management can retain its earnings entirely for their investment in the business of the enterprise. Thus, a new and growing company seeking large funds for its expansion programmes secures ample resources at cheaper cost and without any inconvenienced and obligations.

In view of the above factors, equity shares have proved to be the most prominent source of financing. It also appeals to a large number of investors who are venturesome and are willing to assume risks for a larger income. By purchasing equity shares, they become owners of the benefits of prosperity and progress of the company. This is why a good company does not experience great difficulty in garnering funds through equity stock issues.

However, there is a danger of losing control to outsiders if the company elects to raise additional funds in substantially large amounts through equity issues. Controlling position of the current stockholders is jeopardized, new entrants become owners of the Company and reap the benefits of the Company's prosperity and progress. Current stockholders are, therefore, averse to additional financing by means of equity stock.

4.2.2 DEBENTURES

Debentures are the securities through which the corporation can collect long-term funds. Debentures are creditorship securities. By issuing bonds and debentures the firm can procure funds from lenders. What is a debenture? It is an instrument which is written, signed by the company under its common seal acknowledging the debt due by it to its holders. Clear understanding of the two terms bond and debentures is necessary before discussing these securities in detail. In the U.S.A., bond refers to security that has lien on specific assets of the firm. Debenture on the other hand, refers to a security instrument which is not secured by a lien on any specific assets. In the event of liquidation the debenture-holder becomes a general creditor. There is no such difference between these two terms in our country.

Since debenture is a security representing a long term promise to pay a certain sum of money at a certain time or over the course of the loan, with a fixed rate of interest payable to the holder of the bond.

Long-term agreement is entered both between the company and creditors, and a deed is executed to set the terms of borrowing. Such a deed is known as bond indenture' or 'trust deed'. The 'indenture' contains, among other things, protective provisions that generally include limits on indebtedness, restrictions on dividends, provision for redemption of debentures, etc. For individual debenture-holders it is somewhat difficult to protect their rights since they are scattered all over the country and cannot unite. A representative called a 'trustee' is appointed to deal with the company and enforce the provisions of indenture on behalf of the debenture-holders.

Features of Debentures

Following are the features of debentures:

(a) Maturity: Virtually all bonds have a maturity date and the company agrees to pay off in cash the outstanding bonds at a fixed date. Such bonds which are repayable at fixed date are called 'Redeemable bonds'. Other which have no maturity date are called 'Irredeemable bonds'. Irredeemable debentures are rare in use in India. And in debenture also contains the provisions about the repayment of debt. Companies generally set aside funds out of earnings of the company at periodic interval for retiring all or a portion of bonds before or at maturity. This type of provision is known as 'Sinking Fund Provision' and bonds carrying sinking fund provision are called 'Sinking Fund Bonds'.

Sinking fund requires the corporation to make periodic sinking fund payment to a trustee, in order to retire a specified amount of funds each period. Payments can be cash or bonds that the company purchases in the open market. The trustee uses the cash to call bonds for redemption. Usually bonds are called on a lottery basis by their serial numbers. Because of the orderly retirement of debt as well as the liquidity provided by the regular purchase activity, many investors find the sinking-fund provision valuable. Many sinking funds begin not at the time of issuance of the bond, but after a period of 5 or 10 years.

Sometimes in order to spread the payment of bonds over a long period starting usually one year after the issue, the management may arrange the entire bond issue in such a way that part of the total issue retires serially, i.e., every year. Such bonds are known as 'Serial Bonds'. Serial bonds are not in existence in our country because of rigid provisions of annual retirement of debt which adds to the risks of the company.

(b) Convertible Bonds: A convertible bond is one that may be changed, at the option of the holder, into a certain number of shares of common stock of the corporation. The number of shares into which the bond is convertible is specified in the bond, and these shares remain unissued until actual conversion. Conversion takes place usually before maturity. When there is slump in the stock market and acquisition of capital through equity stock poses a problem or temporarily adverse income position of the company at the time the capital is needed, the management may defer the stock issue. In place of stock issue, convertible bond may be floated with an intention to convert them in future near when, it is believed, earnings of the company will improve and market conditions will change.

(**c) Claims on Income:** Bondholders have priority of claim to income over stockholders. They have legal recourse for enforcing their rights. For protecting their claim to income and assuring regularity of receipt of that income they may even put restrictions on dividend payments to residual owners and for maintenance of adequate liquidity.

Another aspect of bondholder's claim to income is that it is fixed and certain and the borrowing company is under a legal obligation to pay it in cash regardless of the level of earnings of the company. Default in payment of interest may entail the company in extreme predicament and bondholders may even approach the court of law for closure. Bondholders of course, do not have the right to share in the profits of the company.

(d) Claims on Assets: Bondholders have priority in respect of their claim on assets in the event of liquidation of the company. But they are entitled only to get principle amount of their money which was lent. Bonds that are secured by a lien on specific assets of the company are called 'Secured Bond' and those do not have a assets pledged are termed as 'Unsecured Bonds'.

(e) Controlling Power: Holders of debentures are creditors of the company. They do not have controlling power because they have no right to vote for the election of directors and for the determination of important managerial policies. They may, however, indirectly influence Managerial decision through protective covenants in indenture. For instance, to protect their interest, bond indenture may provide for maintenance of minimum liquidity ratio and for building up stipulated amount of reserves before making dividend payments to stockholders.

Evaluation of Debentures as Source of Finance

The use of debentures in the pattern of corporate financing has got wider and deeper significance. Recourse to debt generally tends to reduce cost of capital and consequently helps improve the overall return of the company. Interest on debentures is deductible as a tax expense. Therefore, the debentures reduce the cost of capital and consequently it helps in improving the overall return of the company. Debenture is a cheaper source of funds due to less interest rate and less issuance cost. During the life cycle of many firms when further equity capital are not available at reasonable cost but the same firm may be in a position to attract debt. With the use of debentures a company may take its capital structure flexible and also can have controlling power of the existing owners intact.

However, a corporation should not consider that long-term capital requirements should always be met by issue of bonds. Bonds are such securities which impose fix burden of payment of interest by the company. Another limitation of debenture finance is that with successful doses of debt the firm has to pay higher rate of interest because each further issue of debt involves the lender in greater risk.

After discussing positive and negative aspects of debt financing, we may conclude that companies with certain specific features can avail the benefits of debt. Those companies whose profits are usually constant and high enough to cover fixed interest charges on debentures can afford the luxury of financial leverage (ratio of debt-equity). A business firm which is engaged in providing service or in the production of an essential product will certainly have more stability of income that one producing a luxury product. A company with fluctuating earnings should issue common-stock for its meeting financial requirements.

4.2.3 RETAINED EARNINGS

A business firm satisfies its initial fund requirements by using external resources of funds but resorts to internal financing to meet its subsequent financial needs for expansion, modernization and rationalization programmes. Internal financing refers to financing by internal sources which comprise earnings retained by the business in the form of depreciation and other reserves and income left over after covering all expenses and which are not distributed among stockholders of the enterprise. The firms which are running successfully and set out a portion of profit for future purposes can use these earnings when needed by the firm. This process is technically termed as ‘ploughing back of profits’.

Retained earnings constitute a source of financing for which the company does not bother much. Firms get large amount of funds at relatively cheaper rate and without any legal obligation to refund

the same to meet major portion of its expansion and modernisation requirements and without creating charge against any asset. In another direction too retained earnings prove very useful to the company. With the past accumulated funds the management can repay the matured debts and thereby relieve the company of the rigors of debt burden. In brief, retained earnings provide the best means for company's future growth. The stockholders also stand to gain by internal financing. In the beginning, they have to forego dividend in the short-run, but they will be getting fairly large amount of dividends regularly in future when the company's earnings improve considerably. It also offers tax saving advantage to the stockholders. However, internal financing may not always be useful to the company and its owners. The reckless use of retained earnings will always harm the interests of the stockholders. The management may use the accumulated reserves to finance the needs of companies in which they are keenly interested even though the shareholders may have least interest in them. Another disadvantage of retained earnings is that it may result into over- capitalisation.

4.2.4 FINANCE FROM CENTRAL AND STATE GOVERNMENTS

In India, Central and State governments also provide long-term finance directly to business houses. They not only provide direct finance to industrial units but give guarantees also for the loans raised from banks or public. The period of loans varies from 10-15 years. Since independence assistance from central and state governments have been progressively increasing.

4.2.5 DEVELOPMENT BANKS AND INVESTING INSTITUTIONS

With the declaration of the First Industrial Policy Resolution in 1948 for the rapid industrialisation of the country, the government of India established a series of special financial institutions like, Industrial Finance Corporation of India, State Finance Corporations, the Industrial Development Bank of India, etc.

1. Industrial Finance Corporation of India (IFCI)

IFCI was the first national level development bank set up in 1948 by an Act of Parliament to make medium and long-term funds readily available to industrial concerns particularly when the normal banking support is inappropriate or going to the capital market is impracticable.

In furtherance of the above objective IFCI provides financial assistance by granting loans, underwriting the issue of shares and debentures and subscribing to shares and debentures of industrial concerns. The Corporation also helps business enterprise in raising share capital from capital market and procuring term loans from other financial institutions.

While considering assistance application of an enterprise IFCI looks into the detailed technical, financial, managerial, economic and social aspects of the project in addition to national priorities indicated in five-year plans and policies of the Government. IFCI caters to the needs of medium and large projects either singly or jointly with other all-India Financial Institutions. Normally, the Corporation considers projects costing upto ₹ 5 crore independently. In respect of projects costing over ₹ 5 crores, the Corporation invites other all-India institutions to finance such projects under the system of consortium financing.

2. Industrial Credit and Investment Corporation of India (ICICI)

The basic idea underlying the creation of ICICI was to meet the needs of industry for permanent and long-term funds in the private sector. Thus, the Corporation aims at:

i) Assisting the creation, expansion and modernisation of industrial enterprises within the private sector of industry in India;

ii) Encouraging and promoting participation of private capital, both internal and external in such enterprise; and

iii) Encouraging and promoting private ownership of industrial investment and expansion of investment markets.

ICICI renders financial assistance to industrial undertakings by providing loans repayable over period of 15 years, subscribing to equity shares, sponsoring and underwriting new issues of shares and securities, guaranteeing loans from the private investments sources, providing loans in foreign currency towards the cost of imported capital equipment, providing lease financing and by acting as a merchant banker.

3. Industrial Development Bank of India (IDBI)

IDBI was established in 1964 with a view to propelling the wheels of industrial sector to achieve maximum growth by eliminating gaps in the capital market and supplying sinews of development to all financial agencies engaged in this task. To achieve this basic objective, IDBI is empowered to perform the following functions:

a) Coordinating Function: IDBI coordinates operations of all miniature financial institutions including IFCI, ICICI, LIC and UTI into a single integrated financial structure so that each might contribute to the total effect as it could.

b) Financing Function: As an industrial financier, IDBI can assist all deserving projects regardless of their size which are experiencing enormous problems in assembling funds from normal channels. Its main endeavour in this regard is to ensure that no worthwhile project, howsoever small, is allowed to languish for insufficiency of institutional support. IDBI can assist an enterprise directly and indirectly. As direct financier, it renders assistance to business concerns in the following ways:

1. Granting term loans and advances.
2. Subscribing to purchasing, or underwriting the issue of shares or debentures.
3. Guaranteeing deferred payment due from industrial concerns to third parties and loans raised by them in the open market or from financial institutions.

4. State Financial Corporations (SFCs)

SFCs are the state level development banks set up in India under State Financial Corporations Act, 1951 for the purpose of providing financial assistance to new as well as existing industrial concerns for purpose of establishment, modernisation, renovation, expansion and diversification. These institutions assist a concern in following ways:

1) Granting loans or advances or subscribing to debentures of industrial concerns repayable within 20 years;
2) Guaranteeing loans raised by industrial concerns on such terms and conditions as may be mutually agreed upon but they should be repayable within 20 years;
3) Guaranteeing such deferred payments of any industrial concern as are in connection with the purchase of capital goods within India;
4) Underwriting issue of stocks, bonds or debentures of industrial concerns subject to their being disposed of in the market within seven years;
5) Providing foreign exchange loans under World Bank scheme;
6) Participation in equity capital of the small scale industrial units coming up in backward areas.

A concern can get financial support from a State Financial Corporation upto ₹ 60 lakhs. Only small scale units engaged in all industrial activities including mining, transport by rope ways and development of industrial areas are entitled to get assistance from this institution. SFCs generally provide loans secured by way of legal mortgage of fixed assets and executed in favour of the institution. Forty per

cent margin is usually maintained on loans. However, SFC's policy in this respect has been very flexible. In certain cases particularly those coming up in less developed regions, they lend without any margin.

5. Unit Trust of India (UTI)

The UTI was established in 1964 in public sector for the purpose of mobilisation of savings of the community and redirection of these pooled savings in profitable outlets. During 55 years of its operations UTI provided attractive saving opportunities to the community through sale of units under various schemes and thereby mobilise savings of the community. The UTI utilises these resources in assisting diverse needs of business organisations.

The Trust assists an enterprise by investing in its shares and debentures and underwriting the security issues. In recent years following an amendment the UTI has been empowered to grant term loans, rediscount bills, undertake equipment leasing, hire purchase financing and financing of housing projects. The major considerations influencing the UTI's investment are safety of funds and reasonable return including capital appreciation on its units. In order to translate these considerations into action, the Trust diffuses its investible resources over different types of securities of numerous units belonging to different industry groups.

(B) Medium-term Financing

Intermediate-term debt is defined as borrowings with maturity period greater than 1 year and less than 7 to 10 years. Debts with maturities of less than 1 year are classified as short-term; debts with maturities in excess of 7 to 10 years are considered long term. Many analysts and accountant ignore the distinction between intermediate and long-term debt. They view that debts are of only two types: Short-term for maturities of 1 year or less and long-term for maturities in excess of 1 year. When intermediate term debt is identified as a separate category, the following types are common:

(a) Term Loans: This is a loan from a bank, Non-finance Company, insurance company or other financial institutions for a period ranging between 1 to 7 years. Such loans are generally employed to finance more a permanent portion of working capital requirements. As a result, most of these loans are paid in regular and periodic instalments, although there are exceptions to the rule.

Term loans may take the form of an ordinary loan or a revolving credit. In ordinary term loan lender lends funds and as per the agreement outright for a period of more than a year and upto 10

years. On the other hand, a revolving credit is a formal commitment by a lender to lend a certain amount of money to a firm over a specified period of time.

In India, term loans are being provided mainly by Commercial banks. Industrial Development Bank of India, Industrial Finance Corporations, State Finance Corporations, State Industrial Development Corporations, Industrial Development Corporation of India, Unit Trust of India, and several financial and investment corporations.

Commercial Bank Loans: Commercial banks are primary medium-term lenders to business firms. The loans are generally made for periods upto 7 years, although occasionally loans with longer maturities are also considered. Some features of commercial bank loans are as follows:

1. **Collateral:** Term loans are more frequently secured than short-term loans due to greater risks involved in term lending. Usually, a fixed asset such as a vehicle, a ship, or a piece of machinery, is pledged as collateral for the loan.
2. **Fixed versus Floating Rate:** The interest that is due on term loan with a commercial bank is determined in advance, using one of the two methods. A fixed-rate loan has a single interest rate for the entire period much more common, a floating-rate loan has interest charge that is tied to current money market rate and varies with changes in interest levels. For example, a rate of "2.5 per cent above prime quarter" would vary as the prime rate varies.

   Commercial bank loans offer advantages and disadvantages to the firm. The advantages include establishing a working relationship with a bank that can result in advice and financial expertise from the bank's officers. The disadvantages include disclosure of confidential information and the restrictions that may be imposed as part of the loan agreement. Commercial banks in India have been pumping in growingly large amount of funds to meet financial needs of industrial enterprises.

Insurance Companies: A number of Life Insurance Companies make term loans to business. While commercial banks make loans to firms of varying size and credit risk, insurance companies concentrate on low-risk loans to large and financially viable companies. Because of the high credit standing of their customers, insurance companies are willing to offer maturities of 10 or more years, offer loans that are large than those available from commercial banks, and in some cases even offer unsecured loans. The

major disadvantage of term loans extended by insurance companies is higher interest rate, and major advantage is larger loans and higher amount of money as compared to commercial bank financing.

Pension Funds: A minor source of medium-term financing is the employees' Pension funds that make secured loans to business. These loans are generally secured by mortgages of property and carry terms and conditions similar to loans made by Life Insurance Companies.

(b) Lease Financing

A lease is a contract whereby the owner of an asset (the lessor) grants to another party (the lessee) the exclusive right to use the asset, usually for an agreed period of time, in return for the payment of rent. Most of us are familiar with leases of houses, offices, or telephone. Recent decades have seen an enormous growth in the leasing of business assets such as cars and trucks, and manufacturing plants. An obvious advantage to the lessor is the use of an asset without having to buy it. Because of the contractual nature of a financial lease obligation, it must be regarded as a form of financing. It is used in place of other methods of financing to acquire the use of an asset.

(c) Public Deposits

Industrial and business concerns accept direct term deposits from the public upto a period of 5 years. In India, in cotton textile industry this system has been very popular. But now almost all types of business concerns are accepting public deposits. This system has been very popular during last 7- 10 years. The Reserve Bank of India has enacted rules for regularising these fixed deposits.

4.4 SHORT-TERM FINANCE

In India, two important sources for mobilising short-term funds for financing working capital requirements have been commercial banks and trade credit apart from support being provided through equity base. But, highly stringent credit policies of the banks on one hand and the growing complexities and ever tightening discipline and other controls attached with bank credit and institutional finance on the other have paved way for the companies to go in for new and innovative sources other than traditional bank credit. Such a move of more reliance of corporate sector on capital market and money market resources has helped it to meet ever increasing and dynamic quest for working capital finance. Some of the money market instruments like commercial papers, customer advances, corporate deposits and inter-corporate loans are briefly described in the subsequent pages along with trade credit and commercial bank as sources of finance.

1. Trade Credit

Trade credit is a form of short-term financing common to almost all business. In fact, it is the largest source of short-term funds for business firms collectively. In an advanced economy, most buyers are not required to pay for goods upon delivery but are allowed a short deferment period before payment is due. During this period, the seller of the goods extends credit to the buyer. It is because suppliers are generally more liberal in the extension of credit than are financial institutions. Most of the small companies in rely on trade credit.

There are three types of trade credits: open account, notes payable, and trade acceptances. Among these the most common type is the open-account arrangement, and are known as accounts payable. The seller ships goods to the buyer and sends an invoice that specifies the goods shipped the price, the total amount due, and the terms of sale. There is no formal agreement nor there is specific document recognizing the buyer's liability to the seller. The only evidence with the seller is that credit has been intended on the buyer's order and shipping invoices. Open-account credit is ordinarily extended only after the seller conducts a fairly extensive investigation of the buyer's credit standing and reputation.

In some situations, promissory notes are employed instead of open-account credit. The buyer signs a note that evidences a debt to the seller. The note itself calls for the payment of obligation at some specified future date. Promissory notes have been used in business such as those dealing in furs and jewellery. Promissory notes are generally an interest-bearing instrument. They appear on the seller's balance sheet as notes receivable.

In some lines of business the trade acceptances are used in place of open account. This form of credit also involves a formal recognition of the debt. Under this arrangement of credit, the buyer will not receive the delivery of goods until the buyer accepts a draft written by the seller. The draft is an order of payment at some date in future. When the buyer accepts the draft he designates a bank where draft will be paid on due date.

The trade credit is a source of capital that arises naturally in the course of business because the customers generally do not pay for merchandise until sometime after they are delivered. Another benefit of trade credit as a source of financing is 'its liberality'. Many business firms, particularly smaller and newly set-up organisations, whose access to different sources of money- market is limited and, therefore, experience enormous problems in acquiring needed funds can obtain trade credit. Suppliers are

willing to offer credit liberally for a number of reasons. Basically, they regard credit as a sales aid. Trade credit is also liberal because the supplier does not examine credit worthiness of his customers with the same degree of care than a banker would. Prompt availability of trade credit is another attraction of this source of financing. Customarily there are no formal applications to fill out, no notes to sign, and no rigid repayment dates particularly in open account. If a customer is occasionally a little late in paying a supplier his credit reputation is not put to harm.

2 Commercial Bank's Assistance

Commercial banks play an important role in the short-term financing of companies. They provide this help in the form of overdraft, mortgages, cash credit, hypothecation and discounting of bills and hundies etc.

Loan: In a loan account entire advance is disbursed at one time either in cash or by transfer to his current account. It is a single advance. Except by way of interest and other charges no further withdrawals are allowed in this account. Since loan accounts are not running accounts like overdrafts and cash credit accounts, no cheque books are issued.

Overdraft: Under this facility, the customers are allowed to withdraw in excess of credit balance standing in their Current Deposit Account. A fixed limit is therefore granted to the borrowers within which the borrower is allowed to overdraw his account. Though overdrafts are repayable on demand, they generally continue for long periods by annual renewals of the limits. Interest on overdraft is charged on daily balances.

Cash Credit: Cash credit is an arrangement under which a customer is allowed an advance upto a certain limit against credit granted by the bank. Under this arrangement, a customer need not borrow the entire amount of advance at once, but he can only draw to the extent of his requirements and deposit his surplus funds in this account. The interest is charged not on the full amount but on the amount actually availed by him. Generally the cash credit limits are sanctioned against the security of goods by way of pledge or hypothecation.

3. Sale of Commercial Papers

Commercial Paper (CP) is a short-term money market instrument ideally suited for corporate sector borrowing from banks for their working capital needs and investors. Highly rated companies can take advantage of this source and it serves the needs of investors for parking their short-term funds. CP as a

source of short-term fund is popular in the Western countries and Japan. In U.S.A., it is in vogue for over 100 years whereas its origin in European Countries and Japan is of recent one. Reserve Bank of India (RBI) has permitted issue of CP in our country.

CP is a usance promissory note negotiable by endorsement and delivery typically with a fixed maturity between three months and six months and is issued on a discount basis. It enables companies to raise short-term debt at attractive rates of interest. CP is an unsecured instrument and is not tied to any specific business transaction. It does not carry any underlying collateral security like cash credit advance. However, since CP is carved out of the working capital limits being enjoyed by the issuing company with its bankers, it becomes a substitute source and not an additional source.

4. Commercial Factoring

A firm finances its short-terms requirements of funds by selling the account receivables to specialized dealers known as factors. These are brokers or agents who collect the book debts. Thus, firm can get the whole amount in ready cash and factor collects it afterwards. The firm is not required to establish and operate a separate credit and collection department.

5. The loans from Directors/Managing Directors or other officers of the firm

It is also an important source of short-term finance. The directors or officers of the company can give advance to companies to meet the working capital requirements.

6. Customers advances

If the firm undertakes job or production order on contract basis, then customers may be required to deposit some advance with the company. These advances may be used by the company for their working capital requirements.

4.5 CHECK YOUR PROGRESS

1. Under the lease agreement, the lessee gets the right to
   a. Share profits earned by the lessor
   b. Participate in the management of the organisation
   c. Use the asset for a specified period
   d. Sell the assets
2. Funds required for purchasing current assets is an example of

a. Fixed capital requirement
b. Ploughing back of profits
c. Working capital requirement
d. Lease financing

3. Public deposits are the deposits that are raised directly from
   a. The public
   b. The directors
   c. The auditors
   d. The owners
4. Equity shareholders are called
   a. Owners of the company
   b. Partners of the company
   c. Executives of the company
   d. Guardian of the company
5. ADRs are issued in
   a. Canada
   b. China
   c. India
   d. USA

4.6 SUMMARY

The financial needs of a business may be grouped into three categories which are Long-term, Medium-term and Short-term financial needs. Long-term Sources of finance of a business include Share capital, Debentures/Bonds of different types and loans from financial institutions. Short-term Sources of finance includes Trade credit, Commercial banks, fixed deposits for a period of one year or less, Advances received from customers and Various short-term provisions.

4.7 KEYWORDS

- **Preference Share Capital:** These are a special kind of shares, the holders of such shares enjoy priority, both as regards to the payment of a fixed amount of dividend and repayment of capital on winding up of the company.

- **Retained Earnings:** These are the portion of earning available to equity shareholders, which are ploughed back in the company.
- **Trade Credit:** It refers to the credit extended by the supplier of goods or services to his/her customer in the normal course of business.
- **Commercial Paper:** It represents a short-term unsecured promissory note issued by firms that have a fairly high credit (standing) rating.

4.8 SELF ASSESSMENT TEST

Q.1 Describe the distinguishing features of equity shares.

Q.2 Bring out the distinguishing features of preference shares. In what respect does preferred stock differ from common stock?

Q.3 Evaluate the potentiality of debentures as a source of raising long-term capital.

Q.4 Write notes on:

(a) IFCI (b) ICICI (c) UTI (d) SFC

Q.5 What are the various sources of raising short-term funds? Describe.

4.9 ANSWERS TO CHECK YOUR PROGRESS

1. Use the asset for a specified period
2. Working capital requirement
3. The public
4. Owners of the company
5. USA

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Lesson No.: 5	

COST OF CAPITAL

STRUCTURE

5.0 Learning Objectives

5.1 Introduction

5.1.1 Meaning of Cost of Capital

5.1.2 Significance of Cost of Capital

5.3 Classification of Cost

5.4 Computation of Cost of Capital for Various Sources of Finance

5.5 Check Your Progress

5.6 Summary

5.7 Keywords

5.8 Self-assessment Test

5.9 Answers to Check Your Progress

5.10 References/Suggested Readings

5.0 LEARNING OBJECTIVES

After reading this lesson, you will be able to:

- Recognize the significance of cost of capital
- Categorize the costs
- Make the computation of cost of capital for various sources of finance.

5.1 INTRODUCTION

The cost of capital of a firm represents the minimum rate of return required or expected by its investors. It only refers to the weighted average cost of various sources of finance employed by a firm. The capital

employed by a firm normally comprises equity shares, preference shares, debts borrowed from Commercial Banks and financial institutions and also its retained earnings. The concept of cost of capital is very important in the realm of financial management. At the same time, it is also one of the most difficult and disputed topics in the financial management, since conflicting opinions have been expressed by the financial experts and wizards as regards the way in which the cost of capital can be computed.

5.1.1 MEANING OF COST OF CAPITAL

The items on the liability side of the balance sheet are called capital components. The major capital components are equity, preference and debt. Capital, like any other factor of production, has a cost. A company's cost of capital is the average cost of the various capital components (or securities) employed by it. Putting differently, it is the average rate of return required by the investors who provide capital to the company. The cost of capital of a firm is the minimum rate of return expected by its investors. It is the weighted average cost of various sources of finance used by the firm, viz., equity, preference and debt. The concept of cost of capital is very important in financial management. It is used for evaluating investment projects, for determining capital structure, for assessing leasing proposals etc.

"Cost of Capital", according to Solomon Ezra "is the minimum required rate of earning or the cut-off rate for capital expenditures." In the words of Milton H. Spencer, "cost of capital is the minimum rate of return which a firm requires as a condition for undertaking an investment".

It is well known that the final selection of any capital project from among the various alternatives mainly depends on the cost of the capital of a firm or the cut-off rate representing the minimum rate of return required on investment projects. It is the cut-off or the target or the hurdle rate. In case a firm is not able to achieve the cut-off or the target or the hurdle rate the market value of its shares remains constant at a particular level. Moreover, to achieve the objective of the financial management, viz., wealth maximisation, a firm has to necessarily earn a rate of return more than its cost of capital. The cost of capital in turn depends on the risk involved in the firm. Generally, higher the risk involved in a firm, the higher will be the cost of capital.

5.1.2 SIGNIFICANCE OF COST OF CAPITAL

The concept of cost of capital is very important and the central concept in financial management decisions. The decisions in which it is useful are as follows:

a) Criterion in capital budgeting decision: Any capital budgeting decision involves the consideration of the cost of capital. According to the net present value method of capital budgeting, if the present value of expected returns from the investment throughout its life period is greater than or equal to the cost of investment, the project may be accepted; otherwise the project may be rejected. The present value of expected returns is calculated by discounting the expected cash inflows at the cut-off rate which is the cost of capital. It is clear from the above that the cost of capital serves as a very useful tool in the process of making capital budgeting decisions.

b) Determinant of capital mix in designing of capital structure: The cost of capital acts as a determinant of capital mix in the designing of a balanced and appropriate capital structure. As a rule there should be a proper mix of debt and equity capital in financing a firm's assets. While designing an optimal capital structure of a firm, the management has to consider the objective of maximising the value of the firm and minimising the cost of capital. Computation of a weighted average cost of various sources of finance is very essential in planning and designing the capital structure of a firm.

c) Basis for evaluating the financial performance: The cost of capital can be used as a tool to evaluate the financial performance of top management. The actual profitability of any project is compared to the actual cost of capital funds raised to finance the project. If the actual profitability of the project is on the higher side when compared to the actual cost of capital raised, the performance can be evaluated as satisfactory.

d) Basis for making financial decisions: The cost of capital can be conveniently employed as a tool in making other important financial decisions such as dividend policy, capitalisation of profits, rights issue and working capital.

5.3 CLASSIFICATION OF COST

Cost of capital can be classified in many ways. Some of them are discussed below:

a) Historical cost and future Cost: Historical cost represents the cost which has already been incurred for financing a project. It is computed on the basis of past data collected. Future cost represents the expected cost of funds to be raised for financing a project. Historical cost is significant since it helps in projecting the future cost and in providing an appraisal of the past financial performance by comparing with the standard or predetermined costs. In financial decisions, future costs are more relevant than the historical costs.

b) Explicit Cost and Implicit Cost: Explicit cost refers to the discount rate which equates the present value of cash inflows with the present value of cash outflows. Thus the explicit cost is the internal rate of return which a company pays for procuring the required finances. The explicit cost of a specific source of finance may be determined with the help of the following formula:

$$Io = \frac{C_1}{(1+k)} + \frac{C_2}{(1+k)^2} + \ldots\ldots\ldots\ldots\ldots + \frac{C_n}{(1+k)^n}$$

$$I_o = \sum_{t=1}^{n} \frac{C_t}{(1+k)^t}$$

Where,

Io = is the net cash inflow at zero point of time.

Ct = is the outflow of cash in periods 1 to n.

k = is the explicit cost of capital.

Implicit cost represents the rate of return which can be earned by investing the capital in alternative investments. The concept of opportunity cost gives rise to the implicit cost. The implicit cost represents the cost of opportunity foregone in order to take up a particular project. For example, the implicit cost of retained earnings is the rate of return available to the shareholders by investing the funds elsewhere.

c) Specific Cost and Composite Cost: Capital can be raised by a firm from various sources and each source will have a different cost. Specific cost refers to the cost of a specific source of capital, while composite cost of capital refers to the combined cost of various sources of capital. It is the weighted average cost of capital. It is also termed as overall cost of capital. When more than one type of capital is employed in the business, it is the composite cost which should be considered for decision-making and not the specific cost of that capital alone be considered.

d) Average Cost and Marginal Cost: Average cost of capital refers to the weighted average cost calculated on the basis of cost of each source of capital funds. Marginal cost of capital refers to the average cost of capital which has to be incurred to obtain additional funds required by a firm. Marginal cost of capital is considered as more important in capital budgeting and financing decisions.

5.4 COMPUTATION OF COST OF CAPITAL FOR VARIOUS SOURCES OF FINANCE

For calculating the overall cost of capital of a firm, the specific costs of different sources of finance raised by it have to be computed. These sources are:

(i) Debt (borrowed) Capital,

(ii) Preference Share Capital,

(iii) Equity Share Capital, and

(iv) Retained Earnings.

1. Cost of Debt

It is relatively easy to calculate the cost of debt. The cost of debt is the rate of interest payable on debt. Debt capital is obtained through the issue of debentures. The issue of debentures involves a number of floatation charges, such as printing of prospectus, advertisement, underwriting, brokerage, etc. Again, debentures can be issued at par or at times below par (at discount) or at times above par (at premium). These floatation charges and modes of issue have an important bearing on the cost of debt capital.

The formula adopted or calculating the cost of debt capital is given below:

(i) $K_d = I/P$

Where,

K_d = cost of debt (before tax)

I = Interest

P = Principal

In case the debt is raised by issue of debentures at premium or discount, one should consider P as the amount of net proceeds from the issue and not the face value of debentures. The formula may be modified as:

(ii) $K_d = I/NP$ (where NP = New Proceeds)

When debt is used as a source of finance, the firm saves considerable amount in payment of tax since interest is allowed as a deductible expense in computation of tax. Hence, the effective cost of debt is reduced. In other words, the effective cost of debt, i.e., the after-tax cost of debt would be substantially less than the before-tax cost. The after-tax cost of debt may be calculated with the help of the following formula:

(iii) After-tax cost of debt = K_d (1-t)

Where, t is the tax rate.

Illustration I

(a) A Ltd. issues ₹ 1,00,000, 8% debentures at par. The tax rate applicable to the company is 50%. Compute the cost of debt capital.

(b) B Ltd. issues ₹ 1,00,000, 8% debentures at a premium of 10%. The tax rate applicable to the company is 60%. Compute the cost of debt capital.

(c) C Ltd. issues ₹ 1,00,000, 8% debentures at a discount of 5%. The tax rate is 50%. Compute the cost of debt capital.

(d) D Ltd. issues ₹ 1,00,000, 9% debentures at a premium of 10%. The costs of floatation are 2%. The tax rate applicable is 60%. Compute costs of debt-capital.

Solution

a.

$$K_d = \frac{I}{NP}(1-t)$$

$$= \frac{8,000}{1,00,00}(1-0.5)$$

$$= \frac{8000}{1,00,000} \times 0.5$$

$$= 4\%$$

(b) $K_d = \frac{I}{NP}(1-t)$

$= \frac{8,000}{1,10,000}(1-0.6)$

$= \frac{8,000}{1,10,000} \times 0.4$

$= 2.95\%$

(c) $K_d = \frac{I}{NP}(1-t)$

$= \frac{8,000}{95,000}(1-0.5)$

$= 4.21\%$

(d) $K_d = \frac{I}{NP}(1-t)$

$= \frac{9,000}{1,07,000} \times 0.4$

$= 3.34\%$

Usually, the debt issued is to be redeemed after the expiry of a certain period during the life time of a firm. Such a debt issue is known as Redeemable Debt. The cost of redeemable debt capital may be computed as:

(iv) Before tax cost of debt:

$$K_{bd} = \frac{I + 1/n\ (P\text{-}NP)}{\frac{1}{2}\ (P + NP)}$$

Illustration 2

XYZ Ltd. issues ₹5,00,000, 10% redeemable debentures at a discount of 5%. The cost of floatation amount to ₹15,000. The debentures are redeemable after 5 years. Calculate before-tax and after-tax cost of debt assuming a tax rate of 50%.

Solution

Before-tax cost of debt,

$$K_{bd} = \frac{1+1/n\ (P - NP)}{\frac{1}{2}\ (P + NP)}$$

$$= \frac{50{,}000 + 1/5\ (5{,}00{,}000 - 4{,}60{,}000)}{\frac{1}{2}\ (5{,}00{,}000 + 4{,}60{,}000)}$$

$$= \frac{50{,}000 + 8{,}000}{4{,}80{,}000}$$

$$= \frac{58{,}000 \times 100}{4{,}80{,}000}$$

After-tax cost of debt,

$K_{da} = K_{bd}\ (1 - t)$

$= 13.09\ (1 - 0.5)$

$= 12.09 \times 0.5$

$= 6.045\%$

Illustration 3: ABC Ltd. issues 5,000, 8% debentures of ₹ 100 each at a discount of 10% and redeemable 10 years. The expenses of issues amounted to ₹ 10,000. Find out the cost of debt

capital.

Solution

$$K_{db} = \frac{1 + 1/n\ (P - NP)}{\frac{1}{2}\ (P + NP)}$$

$$= \frac{40{,}000 + 1/10\ (5{,}00{,}000 - 4{,}40{,}000)}{\frac{1}{2}\ (5{,}00{,}000 + 4{,}40{,}000)}$$

$$= \frac{40{,}000 + 6{,}000}{4{,}70{,}000}$$

$$= \frac{46{,}000 \times 100}{4{,}70{,}000}$$

$$= 9.79\%$$

2. Cost of Preference Capital

Normally, a fixed rate of dividend is agreed payable by a company on its preference shares. Though dividend is declared at the discretion of the Board of directors and there is no legal binding on the payment of dividend, yet it does not mean that Preference Share Capital is cost free. The cost of preference share capital is the dividend expected by its investors. Moreover, preference shareholders have a priority to dividend over the equity shareholders. In case dividends are not paid to preference shareholders, it will affect the fund raising capacity of the firm. Hence, dividends are usually paid regularly on preference shares except when there are no profits to pay dividends.

The cost preference capital can be calculated as:

$$K_p = D/P$$

Where, K_p = Cost of Preference Capital

D = Annual Preference Dividend

P = Preference Share Capital (Proceeds)

Further, when preference shares are issued at premium or discount or when cost of floatation is incurred to issue preference shares, the nominal or par value of preference share capital has to be adjusted to find out the net proceeds from the issue of preference shares. In such a case, the cost of preference capital can be computed with the following formula:

$$Kp = D/NP$$

When Redeemable Preference Shares are issued by a company, they can be redeemed or cancelled on maturity date. The cost of redeemable preference share capital can be calculated as:

$$Kpr = \frac{D + 1/n\,(MV - NP)}{½\,(MV + NP)} \times 100$$

Where, Kpr = Cost of Redeemable Preference Shares

D = Annual Preference Dividend

MV = Maturity Value of Preference Shares

N P = Net Proceeds of preference Shares

Illustration 4: Coca Cola Ltd. issued 1000 9% preference shares of ₹ 100 each at a premium of 10% redeemable after 5 years at par. Compute the cost of preference capital

Solution

$$Kpr = \frac{D + 1/n\,(MV - NP)}{½\,(MV + NP)} \times 100$$

$$= \frac{9{,}000 + 1/5\,(1{,}00{,}000 - 1{,}10{,}000)}{½\,(1{,}00{,}000 + 1{,}10{,}000)} \times 100$$

$$= \frac{9{,}000 - 2{,}000 \times 100}{1{,}05{,}000}$$

= 6.7%

3. Cost of Equity Share Capital

As the payment of dividend on equity shares is not legally binding and the rate of dividend is not predetermined, some financial experts hold the opinion that equity share capital does not carry any cost. But this is not true. The shareholders invest their surplus in equity shares with an expectation of receiving dividends and the company must earn this minimum rate so that the market price of the shares remains unchanged. Therefore, the required rate of return which equates the present value of the expected dividends with the markets value of share is the cost of equity capital.

For the purpose of measuring the cost of equity capital will be divided into two parts: (a) the external equity of the new issues (of shares) and (b) the retained earnings because of the floatation costs involved in the former. It is very difficult to measure the cost of equity in practice, since it is difficult to estimate the future dividends expected by the equity shareholders.

Moreover, the earnings and dividends on equity share capital are generally expected to grow. The cost of equity capital can be computed in the following ways:

(a) Dividend Yield Method or Dividend Price Ratio Method: Under this method, the cost of equity capital is the 'discount rate that equates the present value of expected future dividends per share with the net proceeds (or current market price) of a share'. Symbolically,

$$Ke = \frac{D}{NP} \text{ or } \frac{D}{MP}$$

wher Cost of Equity Capital

Expected Dividend per share

Net Proceeds per share

and Market Price per share

The basic assumptions underlying this method are that the investors give utmost importance to dividends and the risk in the firm remains constant.

The dividend price ratio method cannot be considered as a sound one for the following reasons: (i) it does not consider the growth in dividend (ii) it does not consider future earnings or retained earnings

and (iii) it does not take into account the capital. It is suitable only when the company has stable earnings and stable dividend policy over a period of time.

Illustration 5: Maruti Ltd. issues 5,000 equity shares of ₹ 100 each at a premium of 10%. The company has been paying 20% dividend to equity shareholders for the past five years and expects to maintain the same in the future also. Compute the cost of equity capital. Will it make any difference if the market price of equity share is ₹ 160?

Solution

$$Ke = \frac{D}{NP}$$

$$= \frac{20}{110} \times 100$$

$$= 18.18\%$$

if the market price of a equity share is ₹ 160.

$$Ke = \frac{D}{MP}$$

$$= \frac{20}{160} \times 100$$

$$= 12.5\%$$

where Cost of equity capital

Expected Dividend per share

Net proceeds per share

Rate of growth in dividends.

(b) Dividend Yield plus growth in dividend method: When the dividends of the firm are expected to grow at a constant rate and the dividend pay-out ratio is constant, this method may be the cost of equity capital is based on the dividend and the growth rate.

$$Ke = \frac{D}{NP} + G$$

Further, in case cost of existing equity share capital is to be calculated, the NP should be changed with MP (market price per share) in the above equation.

$$Ke = \frac{D}{MP} + G$$

Illustration 6

(a) Hero Honda Ltd. issues 2000 new equity shares of ₹ 100 each at par. The floatation costs are expected to be 5% of the share price. The company pays a dividend of ₹ 10 per share initially and the growth in dividends is expected to be 5%. Compute the cost of new issue equity share.

(b) If the current market price of an equity share is ₹ 160, calculate the costs of existing equity share capital.

Solution:

(a) $Ke = \frac{10}{100-5} + 5\% = 15.33\%$

(b) $Ke = \frac{D}{MP} + G$

$= \frac{10}{160} + 5\% = 11.25\%$

(c) Earning yield method: Under this method, the cost of equity capital is the discount rate that equates the present value of expected future earnings per share with the net proceeds (or current marketing price) of a share. Symbolically:

$$K_e = \frac{\text{Earnings per Share}}{\text{Net Proceeds}}$$

$$= \frac{EPS}{NP}$$

Where, the cost of existing capital is to be calculated.

$$K_e = \frac{\text{Earnings per Share}}{\text{Market Price per Share}}$$

$$= \frac{\text{EPS}}{\text{MPS}}$$

This method of computing cost of equity capital may be employed in the following cases:

(a) When the earnings per share are expected to remain unchanged.

(b) When the dividend pay-out ratio is 100 per cent or when the retention ratio is zero, i.e., all the available profits are fully distributed as dividends.

(c) When a firm is expected to earn an amount of new equity share capital, which is equal to the current rate of earnings.

(d) The market price of share is influenced by the earnings per share alone.

Illustration 7: Jindal Ltd. is considering an expenditure of ₹ 80 lakhs for expanding its operations. Other particulars are as follows:

Number of existing equity		1
Market value of existing share		₹
Net earnings	=	₹ 90 lakhs

Compute the cost of existing equity share capital and of new equity capital assuming that new shares will be issued at a price of ₹ 54 per share and the cost of new issue will be ₹ 2 per share.

Solution

Cost of existing equity share capital

$$K = \frac{\text{EPS}}{\text{MPS}}$$

$$\text{EPS, or Earnings per share} = \frac{90}{10} = ₹ 9$$

$$K_e = \frac{9 \times 100}{60}$$

$$= 15\%$$

Cost of New Equity Capital

$$K_e = \frac{EPS}{NP}$$

$$= \frac{9 \times 100}{54 - 2}$$

$$= \frac{9 \times 100}{52}$$

$$= 17.30\%$$

(d) Realised Yield Method: The main drawback of the dividend yield method or earnings yield method lies in the estimation of the investors' expected future dividends on earnings. It is very difficult, if not impossible, to estimate future dividends and earnings precisely, since both of them depend on many uncertain factors. To overcome this shortcoming, realised yield method which takes into consideration the actual average rate of return realised in the past, is employed to compute the cost of equity share capital. While calculating the average cost of return realised, dividends received in the past along with the gain realised at the time of sale of shares, should be considered. The cost of capital is equal to the realised rate of return by the shareholders.

This method is based upon the following limitations:

(a) The firm will continue to remain and face the same risk, over the period:

(b) The investors' expectations are based upon the past realised yield;

(c) The investors get the same rate of return as the realised yield even when invested elsewhere;

(d) The market price of shares remains unchanged.

4. Cost of Retained Earnings

It is generally misunderstood that retained earnings do not involve any cost since a firm is not required to pay dividends on retained earnings. However, the shareholders expect a return on retained profits. Retained earnings accrue to a firm only because of the sacrifice made by the shareholders in not getting the dividends declared out of the available profits fully. The cost of retained earnings is equal to the rate of return which the existing shareholders will obtain by investing the after-tax dividends in alternative

investments. It thus represents the opportunity cost of dividends foregone by the shareholders. Cost of retained earnings can be computed with the help of following formula:

$$Kr = \frac{D}{NP} + G$$

where,

D= Expected Dividend

NP=Net proceeds of equit

G=Rate of growth

Further, it important to note that shareholders, usually, cannot obtain the entire amount of retained profits by way of dividends even if there is 100 per cent pay-out ratio. It is so because the shareholders are required to pay tax. However, tax adjustment in determining the cost of retained earnings is a difficult problem because all shareholders do not fall under the same tax bracket. Moreover, if the shareholders wish to invest their after-tax dividend income in alternative investments securities, they may have to incur some additional costs towards purchasing the securities such as brokerage. Hence, the effective rate of return realised by the shareholders from the new investment will be somewhat lesser than their present return from the firm. To make adjustment in the cost of retained earnings for tax and costs of purchasing new securities, the following formula may be adopted:

$$K_r = \left(\frac{D}{NP} + G\right) X(1-t)X(1-b)$$

or, $K_r = Ke\ (1-t)\ (1-b)$

Where,

Kr= Cost of retained earnings

D= Expected dividend

G= Growth rate

NP= Net Proceeds of Equity Issue

T= Tax rate

b= Cost of purchasing new securities, or brokerage

Ke= Rate of return available to shareholders

Illustration 8: A firm's K e (return available to shareholders) is 12%, the average tax rate of shareholders is 50% and it is expected that 2% is brokerage cost that shareholders will have to pay while investing their dividends in alternative securities. What is the cost of retained earnings?

Solution

$$\text{Cost of Retained Earnings, } K_r = K_e (1-t) (1-b)$$

where, rate of return available to shareholders

tax rate

brokerage cost

12% x (1-5) (1-02)

12% x .5 x .98

5.88%

5. Weighted Average Cost of Capital

The term weighted average cost of capital is generally used in composite or overall sense, especially in financial decision making. It is used only to refer to the costs of specific forces of capital such as cost of equity, etc. Before implementing any capital expenditure project, it is common experience to compare the cost of the specific source of fund raised to finance a particular project with its profitability. But this is rather fallacious. For, a firm's decision to use debt capital adversely affects its potential using low cost debt in future and also makes the position of the existing shareholders more risky. This increases the risk to the shareholders which is turn increases the cost of equity. Again, the firm's decision to use equity capital to finance its projects will enlarge its potential for borrowing, in future. Because of this linkage between the methods of financing and their costs, the term cost of capital should be used in a composite term. Thus, the composite cost or overall cost of capital is the weighted average cost of various sources of funds, weights being the proportion of each source of funds in the capital structure. It should also be remembered that it is the weighted average concept and not the simple average, which is more relevant in calculating the overall cost of capital. As the firms do not use various sources of funds in equal proportion, the simple average cost of capital will not be appropriate to use, in the capital structure decision-making.

The following steps are involved in calculating the weighted average cost of capital:

i) To calculate the cost of the specific sources of funds individually (i.e., cost of debt, cost of equity, cost of preference capital, etc.).

ii) To multiply the cost of each source by its proportion in the capital structure and

iii) Add the weighted costs of all courses of funds to get the weighted cost of capital.

The cost of capital should always be calculated on the after-tax basis, in financial decision-making. Hence, the component costs one used for calculating the weighted average cost of capital.

Illustration 9: The following is the capital structure of a TATA Ltd.

Sources of Finance	**Amount**	**Proportion**	**Cost**
Equity Share capital (4000 Share of ₹ 100/-each)			
Retained earnings (Reserves)	₹ 4,00,000	40%	14.0%
Preference capital	2,00,000	20%	13.0%
Debt	1,00,000	10%	12.0%
	3,00,000	30%	9.0%

Calculate the weighted average cost of capital of the company.

Solution:

The weighted average cost of TATA Ltd. is computed as follows:

Source (1)	**Amount (2)**	**Proportion (3)**	**After-tax (4)**	**Weighted cost (5)**
Equity capital 4,00,000 (4,000 Share of ₹ 100/- each)				
Retained Earnings	4,00,000	40%	14.0	5.60
Pref. Capital	2,00,000	20%	13.0	2.60
Debt	1,00,000	10%	12.0	1.20
Weighted Average cost of capital	3,00,000	30%		2.70
				12.1

The weighted average cost of TATA Ltd. can also be calculated as follows:

Alternative Method

Source (1)	Amount (2)	Proportion(3)	After-tax (4)
Equity Capital	4,00,000	14.0%	56,000
Retained	2,00,000	13.0%	26,000
Pref. capital	1,00,000	12%	12,000
Debt	3,00,000	9.0%	27,000
	₹ 10,00,000		₹1,21,000

Weighted Average Cost of Capital= $\frac{₹\ 1,21,000 \times 100}{₹10,00,000}$ =12.1%

Book Value Vs. Market Value Weights

The weighted cost of capital can be calculated by using either the book value or market value weights. If there is any difference between book value and market value weights, the weighted average cost of capital would also differ according to the weights used. When the market value of the share is higher than book value, the weighted average cost of capital calculated by using the book value weight will be much lower and vice versa.

Computation of Weighted Average Cost of Capital (Market Value weight)

Source	Amount	Proportion	After-tax	Weighted cost
Equity capital (4,000 Share of ₹ 22.50)	₹9,00,000	69.2%	14.0%	9.69%
Pref. capital	1,00,000	7.7%	12.0%	0.92
Debt	3,00,000	23.1%	9.0%	2.08
	₹ 13,00,000			12.69%

It can be observed that the total market value of the equity shares outstanding takes into account the retained earnings also. It is obvious that the market value of cost of capital (12.69%) is higher than

book value cost of capital (12.1%) since market value of equity share capital (₹ 9,00,000) is higher than its book value (₹ 6,00,000). From the above it is clear that the market value weight should be preferred over the book value weights since the market values reflect the expectation of investors. At the same time, market value fluctuates very widely and frequently and there is difficulty in using the market value weights in the computation of weighted cost of capital. In practice, the use of the book value weights is always preferred for the following reasons:

(a) the firm determines the capital structure targets in terms of book value only.

(b) the book value particulars can be easily obtained from the published statement of the company.

(c) moreover, the debt-equity ratio based on book values alone are analysed by the investors to evaluate the risk involved in their investment.

5.5 CHECK YOUR PROGRESS

1. Weighted average cost of capital includes:
   A. Cost of equity
   B. Cost of debt
   C. Cost of equity +cost of debt
   D. Cost of equity+ cost of debt+ cost of retained earnings.
2. Cost which equates the present value of cash inflows with the present value of cash outflows implies:
   A. Implicit cost
   B. Historical cost
   C. Explicit cost
   D. Specific cost
3. Combined cost of various sources of capital implies:
   A. Composite cost
   B. Explicit cost
   C. Specific cost
   D. Historical cost
4. Cost of capital refers to the average cost of capital which has to be incurred to obtain additional funds required by a firm implies:

A. Marginal cost

B. Average cost

C. Specific cost

D. Explicit cost

5. EPS implies

A. Earning per share

B. Equity per share

C. Equal per share

D. Earning post share

5.6 SUMMARY

The cost of capital is viewed as one of the corner stones in the theory of financial management. Cost of capital may be viewed in different ways. The cost of capital is useful in designing optimal capital structure, investment evaluation, and financial performance appraisal. The financial manager has to compute the specific cost of each type of funds needed in the capitalization of a company. Retained earnings are one of the internal sources to raise equity finance. Cost of equity capital, is the minimum rate of return that a firm must earn on the equity financed portions of an investment project in order to leave unchanged the market price of the shares. Cost can be classified in to historical and future cost, explicit and implicit cost, specific and composite cost, average and marginal cost.

5.7 KEYWORDS

- **Cost of Capital:** It is that minimum rate of return, which a firm must earn on its investments so as to maintain the market value of its shares.
- **Implicit Cost:** It is the cost of opportunity which is given up in order to pursue a particular action.
- **Opportunity Cost:** The benefit that the shareholder foregoes by not putting his/her funds elsewhere because they have been retained by the management.
- **Specific Cost:** It is the cost associated with particular component or source of capital.

5.8 SELF ASSESSMENT TEST

Q.1 How is Cost of debt computed?

Q.2 What is mean by opportunity cost?

Q.3 How is cost of preferred stock computed?

Q.4 How is the weighted average cost of capital calculated? What is its importance?

Q.5 Define the term 'Cost of Capital'.

Q.6 "The equity cost is free". Do you agree? Give reasons.

Q.7 "Debt is the cheapest source of funds". Comment.

Q.8 The following is the capital structure of Saras Ltd. As on 31-12-2018:

	₹
Equity Shares-20,000 shares of ₹ 100 each	20,00,000
10% Preference Shares of ₹ 100 each	8,00,000
12% Debentures	12,00,000
	40,00,000

The market price of the company's share is ₹ 110 and it is expected that a dividend of ₹ 10 per share would be declared after 1 year. The dividend growth rate is 6%.

i. If the company is in the 50% tax bracket, compute the weighted average cost of capital.

ii. Assuming that in order to finance an expansion plan, the company intends to borrow a fund of ₹ 20 lacs bearing 14% rate of interest, what will be the company's revised weighted average cost of capital? This financing decision is expected to increase dividend from ₹ 10 to ₹ 12 per share. However, the market price of equity share is expected to decline from ₹ 110 to ₹ 105 per share.

Q.9 The following is the capital structure of a company:

Source of Capital	**Book Value (₹)**	**Market Value (₹)**
Equity Shares @ ₹ 100 each	8,00,000	16,00,000
9% Cumulative Preference Shares @ ₹ 100 each	2,00,000	2,40,000
11% Debentures	6,00,000	6,60,000
Retained Earnings	4,00,000	—
	20,00,000	25,00,000

The current market price of the company's equity share is ₹ 200. For the last year the company had paid equity dividend at 25% and its dividend is likely to grow 5% every year. The corporate tax rate is 30% and shareholders personal income tax rate is 20%.

You are required to calculate:

i. Cost of Capital for each source of capital.

ii. Weighted average cost of capital on the basis of book value weights.

5.9 ANSWERS TO CHECK YOUR PROGRESS

1: D 2: C 3: A 4: A 5: A

5.10 REFERENCES/SUGGESTED READINGS

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Subject: Financial Management	
Course Code: BC 502	**SLM Conversion By:** Ms. Chand Kiran
Lesson No.: 6	

CAPITAL STRUCTURE DECISIONS

STRUCTURE

6.0 Learning Objectives
6.1 Introduction
6.1.1 Meaning and Feature of Capital Structure
6.2 Guiding Principles of Capital Structure Decision
6.3 Factors affecting the Pattern of Capital Structure
6.4 Models of Capital Structure Decisions
6.5 Check your Progress
6.6 Summary
6.7 Keywords
6.8 Self-Assessment Test
6.9 Answers to Check Your Progress
6.10 References/Suggested Readings

6.0 LEARNING OBJECTIVES

- To focus on guiding principles of Capital Structure decisions.
- To provide an understanding of various factors that impact capital structure decisions.
- To discuss various models of Capital Structure Decisions.

6.1 INTRODUCTION

Capital Structure of a company is very important for company's survival. If the capital structure of a company is not optimized, then it becomes difficult for a company to sustain i.e. sometimes it has to face shortage of capital, sometimes it has to bear high interest. So in view of above, it becomes very important for a finance manager to ensure that the firm's capital structure is as per the market and organisation

condition. Given the capital budgeting decision of a firm, it has to decide the way in which the capital projects will be financed. Every time the firm makes an Investment decision, it has to undertake a financing decision also. For example, a decision to purchase a new machinery or plant implies specific ways of financing that project. Should the firm employ equity or debt or both? What may be its implications/ What is the appropriate mix of debt and equity? These are some questions that a firm need to answer before taking up any Financing decision. Capital structure means the structure or constitution or break-up of the capital employed by a firm. The capital employed consists of both the owners' capital and the debt capital provided by the lenders. Debt capital is understood here to mean the long term debt which has been deployed to build long term assets. Apart from the elements of equity and debt in the capital structure, a firm could have quasi equity in the form of convertible debt. The Financing or Capital Structure decision is a significant managerial decision as it influences the shareholder's return and risk. Consequently, the market value of the share may be affected by the capital structure decision.

6.1.1 MEANING AND FEATURE OF CAPITAL STRUCTURE

The basic objective of financial management is to maximize the shareholders wealth. Therefore, all financial decisions in any firm should be taken in the light of this objective. Whenever a company is required to raise long-term funds the finance manager is required to select such a mix of sources of finance that overall cost of capital is minimum (i.e., value of the firm/wealth of shareholders is maximum). Mix of long-term sources of finance is referred as "capital structure".

Optimum Capital Structure

The capital structure is said to be optimum when the firm has selected such a combination of equity and debt so that the wealth of firm (shareholder) is maximum. At this capital structure, the cost of capital is minimum and market price per share is maximum. It is very difficult to find out optimum debt and equity mix where capital structure would be optimum because it is difficult to measure a fall in the market value of an equity shares on account of Increase in risk due to high debt content in capital structure. Hence, in practice, the expression "appropriate capital structure" is more realistic expression than 'optimum capital structure'.

Features of an Appropriate Capital Structure

Following are the features of a capital structure:

1. Profitability: The most profitable capital structure is one that tends to minimize cost of financing and maximize earning per equity share.

2. Flexibility: The capital structure should be such that company can raise funds whenever needed.

3. Conservation: The debt content in the capital structure should not exceed the limit, which the company can bear.

4. Solvency: The capital structure should be such that firm does not run the risk of becoming insolvent.

5. Control: The capital structure should be so devised that it involves minimum risk of loss of control of the company.

6.2 GUIDING PRINCIPLES OF CAPITAL STRUCTURE DECISION

A finance manager has to plan the pattern of capital structure for the firm in such a way that owners' interest is maximised. Accordingly, that pattern of capital structure should be chosen which may minimise cost of capital and maximise value of stocks. Sometimes, a finance manager is swayed by other interests and points of view and chooses a pattern that is not best suited to the shareholders. For instance, the management in its endeavour to continue for existence would be more interested in issuing stock than in bond which might add risks in the company and consequently their position might be at stake. Likewise, management might be forced by lenders to go for equity stock instead of bonds because that would strengthen the security of bondholders in the company. Nevertheless, analysis in the present chapter is based on the premise that the capital structure decision in primarily governed by wealth maximisation goal.

Broadly speaking, there may be three fundamental patterns of capital structure in a new company:

i) Financing of capital requirements exclusively by equity share/stock;

ii) Financing of capital requirements by equity, preferred stocks; and

iii) Financing of capital needs by equity, preferred stock and bonds.

Which of the above patterns would be most suited to the company, should be decided in the light of the fundamental principles laid down for this purpose.

While choosing a suitable pattern of capital structure for the company finance manager should keep into consideration some fundamental principles. These principles are the guiding force and need to be considered jointly. A good finance manager strikes golden mean among them by giving weightage to

them. Weights are assigned in the light of general state of the company, specific conditions prevalent in the industry and the circumstance within which the company is running. Management freedom to adjust debt-equity mix is primarily conditioned by availability of various types of funds in desired quantity. For example, a finance manager decides to raise debenture loan to meet additional capital requirements of the company but owing to increased risk in the company lenders may be ready to lend. Under such a condition he finds it difficult to strike a desired adjustment in capital structure. In view of this, good sense of finance management lies in satisfactory compromise between management desire for funds and constraints in supply of funds. Let us discuss the following principles:

(a) Cost Principle

As per this principle, ideal pattern of capital structure is one that tends to minimise cost of financing and maximise earning per share. Cost of capital is subject to interest rate at which payments have to be made to suppliers of funds and tax status of such payments. Debt capital is cheaper than equity capital from both the points of view. In the first instance, cost of debt is limited. Bond holders do not participate in superior profits if earned, rate of interest on bonds is usually much less than the dividend rate. Secondly, interest on debt is deductible for income tax purposes whereas no deduction is allowed for dividends payable on stock. Consequently, effective rate of interest which the company has ultimately to bear would be less that rate of interest at which bonds are issued. For example, if bonds carry 10 per cent interest rate and corporate tax rate is 40 per cent, effective cost of debt would be 6 per cent. Thus, use of debt capital in the financial process is significantly helpful in raising income of the company.

(b) Risk Principal

This principle states that such a pattern of capital structure should be devised by which the company does not run the risk of bringing on a receivership with all its difficulties and losses due to insolvency. Since bond is a commitment for a long period, it involves risk. If the expectations and plans on which the debt was issued change, debt may prove fatal to the company. If, for example, income of the corporation declines to such a low levels that debt service, which is a contractual obligation, cannot be met out of current income, the debt may be highly risky for the company because the bondholder in that case may foreclose and consequently equity stockholders may lose part or all of their assets. Similarly, if the company issues large amount of preferred stock, residual owners may be left with no or little income after satisfying fixed dividend obligations in the year of low earnings. Assumption of large risk by the use of

more and more debt and preferred stock affects the share values and share prices may consequently. tend to go down. This would result in capital loss of the common stock holders.

As against this since common stock neither entails fixed charges not the issuer is under legal obligation to pay dividends, the corporation does not incur risk of insolvency though of course issue of additional common stock may result in decline in earnings per share of the old common stockholders owing to dilution of earnings.

Also risk principle places relatively greater reliance on common stock for financing capital requirements of the corporation and forbids as far as possible the use of fixed income bearing securities.

(c) Control Principle

While designing appropriate capital structure for the company and for that matter choosing different types of securities, finance manager should also keep in mind that controlling position of residual owners remain undisturbed. The use of preferred stock and also bonds offers a means of raising capital without affecting control. The management desiring to retain control must raise funds through bonds.

Since common stock carries voting rights, issue of new common stock will reduce the control of existing shareholders. For example, a company is capitalised exclusively with equity share capital of ₹2,00,000 divided in 20,000 shares of ₹ 10 each. If the management contemplates to issue 10,000 new equity shares, voting rights of the old stockholders would be reduced to 67 per cent (20,000/30,000). Now if one shareholder holds 60 per cent of the old shares, his holding would decline to 40 per cent of the total stock after floatation of new stock. Thus, a shareholder, who had predominant control over the affairs of the company, would lose this position because new stockholders would share control with him. But this does not mean that the corporation should be over indebted with heavy doses of debt because that would certainly increase the possibility of the corporation's bankruptcy and the corporation might suffer the consequences of reorganisation and liquidation. Instead of foregoing entire business of the corporation by introducing greater doses of debt, it would be more desirable to issue common stock and share control with new stockholders.

(d) Flexibility Principle

According to flexibility principle, the management should strive toward achieving such combinations of securities that the management finds it easier to manage sources of funds in response to major changes in

need for funds. Not only several alternatives are open for assembling required funds but also bargaining position of the corporation is strengthened while dealing with the supplier of funds.

For example, if a company is top heavy with debt and has mortgaged all its fixed assets to secure presently outstanding debt it may find it difficult to obtain loan further, even though market condition in respect of availability of debt is favourable because lenders feel shy of lending money to such highly risky concern.

Accordingly, the company might be compelled to raise equity share capital at a time when there is scarcity of such capital in the market. Thus, for sake of the solvency the company should not assume more debt. Further, the management should, as far as possible, avoid getting cheaper loan on terms and conditions that limit the company's ability to procure additional resources. For example, if a company borrowed money in the past on the condition that no further borrowing would be made in future or dividend payments beyond certain limit would not be made to equity stockholders, it restricts its manoeuvre-ability in the capital funds. Such pledges should be avoided.

(e) Timing Principle

Timing is always important in financing and more particularly in a growing company. Manoeuvrability principle is sought to be adhered to in choosing the type of funds so as to enable the company to seize market opportunity and minimise cost of raising capital and obtain substantial savings. Important point that is to be kept in mind is to make the public offering of such securities as are greatly in demand. Depending on business cycles, demand of different types of securities oscillates. In times of boom when there is all- around business expansion and economic prosperity and investors have strong desire to invest, it is easier to sell equity shares and raise ample resources. But in periods of depression bonds should be issued to attract money because investors are afraid to risk their money in stocks which are more or less speculative. Thus timing may favour debt at one time and common stock or preferred stock at other times.

6.3 FACTORS AFFECTING THE PATTERN OF CAPITAL STRUCTURE

It comes from the above discussion that the principles determining the choice of different sources of capital funds are antagonistic to each other. For example, cost principle supports induction of additional doses of debt in the business which may not be favoured from risk point of view because with additional debt the company may run the risk to bankruptcy. Similarly, control factor supports strongly issue of

bonds but manoeuvrability factors discounts this step and favours the issue of common stock. Thus, to design suitable pattern of capital structure for the company, finance manager must bring about a satisfactory compromise among these conflicting factors of cost, risk, control and timing. This compromise is to be reached by assigning weight to these factors in terms of economic and industrial characteristics and also in terms of specific characteristics of the company. We shall now discuss as to how significance of these principles is influenced by different factors.

i) Characteristics of the Economy

Any decision relating to pattern of capital structure must be made in the light of future developments which are likely to take place in the economy because the management has little control over the economic environment. The finance manager should, therefore, make predictions of the economic outlook and adjust the financial plan, accordingly. Tempo of business activity, state of capital market, state regulation, taxation policy and financial policy of financial institutions are some of the vital aspect of the economy which have strong bearing on the capital structure decision.

(a) Tempo of Business Activities: If the economy is to recover from current depression and the level of business activity is expected to expand, the management should assign greater weightage to manoeuvrability so that the company may have several alternative sources available to procure additional funds to meet its growth needs and accordingly, equity stock should be given more emphasis in financing programmes and avoid issuing bonds with restrictive covenants.

At a time when Indian economy is looking up and tending towards globalisation, manoeuvrability principle will receive greater preference.

(b) State of Capital Market: Study of trends of capital market should be undertaken in depth since cost and availability of different types of funds is essentially governed by them. If stock market is going to be plunged in bearish state and interest rates are expected to decline, the management may provide greater weightage to manoeuvrability factors in order to take advantage of cheaper debt later on and postpone debt for the present. However, if debt will become costlier and will be scarce in its availability owing to bullish trend of the market, income factor may receive higher weightage and accordingly, the management may wish to introduce additional doses of debt.

(c) Taxation: The existing taxation provision makes debt more advantageous in relation to stock capital in as much as interest on bonds is a tax deductible expense whereas dividend in subject to tax. Although it is too difficult to forecast future changes in tax rates, there is no doubt that the tax rates will not be adjusted downwards. In view of prevailing still high corporate tax rate in India, the management would wish to raise degree of financial leverage by playing greater reliance of borrowing.

(d) Policy of Term-financing Institutions: If financial institution adopt harsh policy of lending and prescribe highly restrictive terms management must give more weightage to manoeuvrability principle and abstain from borrowing from those institutions so as to preserve the company's manoeuvrability in capital funds. However, if funds can be obtained in desired quantity and on easy terms from the financial institution it would be in fitness of things to assign more weight to cost principle and obtain funds from the institution that supplies cheaper funds.

ii) Characteristics of the Industry

(a) Cyclical Variations: There are industries whose products are subject to wider variations in sales in response to national income. For example, sales of refrigerators, machine tools and most capital equipment fluctuate more violently than the income. As against this, some products have low income elasticity and their sales do not change in proportion to variation in national income.

The management should attach more significance to manoeuvrability and risk principles in choosing suitable sources of funds in an industry dealing in product whose sales fluctuate very markedly over a business cycle so that the company may have freedom to expand or contract the resources used in accordance with business requirements. Further, the management would be averse to secure loan for additional funds since this would go against the interests of them, owners and the company would run the risk of bankruptcy during the lean years which could spell death knell of the company.

(b) Degree of Competition: Public utility concerns are generally free from intra industry competition. Accordingly, profits of these concerns in the absence of inroads of competitors are likely to be relatively more stable and predictable. In such concerns, the management may wish to provide greater weightage to cost principle to take advantage of financial leverage. But where nature of industry is such that there is neck to neck competition among concerns and profits of the

business are, therefore, no easy to predict, risk principle should be given greater consideration. Accordingly, the company should insist on equity stock financing because it would incur the risk of not being able to meet payments of borrowed funds in case bonds are issued.

(c) Stage of Life Cycle: Factors influencing the pattern of capital structure are also influenced by stage of the life cycle of industry to which the company belongs. In an infant industry, rate of failure is very high. The main source of funds to such industry is equity capital obtained through underwriters. Debt should be avoided by the infant industry because great risk is already associated with the industry. Thus in the case of new industry risk principle should be the guideline in selecting sources of funds. During periods of rapid growth manoeuvrability factors should be given special consideration so as to leave room open for easy and rapid expansion is given on research and development programmes in order to develop new products and to postpone ultimate decline in sales. These capital expenditure programmes must be financed out of common stock because of greater uncertainty in respect of improvement in the business earnings. If level of business activity is expected to decline in the long run, capital structure should be designed in such a manner that desired contraction in funds used is possible in future.

iii) Characteristic of Company:

Finally, peculiar characteristics of the company effect the factors influencing the choice of different source of funds. Accordingly, weights are assigned to different principles of manoeuvrability, cost, risk control and timing in the light of the peculiar features of the company. Let us confine our analysis of these characteristics which are distinct from the industry.

(a) Size of Business: Smaller companies confront tremendous problem in assembling funds because of their poor creditworthiness. Investors feel loath investing their money in securities of these companies. Lenders prescribe highly restrictive terms in lending. In view of this, special attention should be paid to manoeuvrability principle so as to assure that as the company grows in size it is able to obtain funds when needed and under acceptable terms. This is why common stock represents major portion of capital in smaller concerns. However, management should also give special consideration to the factor of control because if the company's common stock were publicly available some large concern might buy a controlling interest. In view of this,

management might insist on debt for further financing so as to maintain control or common stock should be sold in closed circle so that control of the firm does not pass in the hands of outsiders.

(b) Form of Business organisation: Control principle should be given higher weightage in private limited companies where ownership is closely held in a few hands. This may not be so imminent in the case of public limited companies whose shareholders are large in number and so widely scattered that it becomes difficult for them to organise in order to seize control. In such form of organisation manoeuvrability looms large because a public limited company in view of its inherent characteristics finds it easier to acquire equity as well as debt capital.

In proprietorship or partnership form of organisation manoeuvrability factors may not be helpful owing to limited access of proprietary or a few partners.

(c) Stability of Earnings: With greater stability in sales and earning a company can insist on leverage principle and accordingly it can undertake the fixed obligation debt with low risk. But a company with irregular earnings will not choose to burden itself with fixed changes. Such company should, therefore, pay greater attention to risk.

(d) Asset Structure of Company: A company, which has invested major portion of funds in long lived fixed assets and demand of whose products is assured, should pay greater attention to leverage principle to take advantage of cheaper source. But risk principle will outweigh leverage principle in company whose assets are mostly receivables and inventory, value of which is dependent on the continued profitability of the individual concern.

(e) Age of Company: Younger companies find themselves in difficult situation to raise capital in the initial years because of greater uncertainly involved in them and also because they are not known to supplier of funds. It would, therefore, be worthwhile for the management to give more weightage to manoeuvrability factor so as to have as many alternatives as possible in future to meet their growth requirements.

Contrary to this, established companies with good earnings record are always in comfortable position to raise capital from whatever sources they like. Leverage principle should, therefore, be insisted upon in such concerns.

(f) Credit Standing: A company with high credit standing has greater ability to adjust sources of funds upwards or downwards in response to major changes in needs for funds than the one with

poor credit standing. In the former case, the management should pay greater attention to manoeuvrability factor and should aim at improving credit standing of the latter by improving its liquidity, and earnings potential.

(g) Attitude of Management: Attitude of the persons who are at the helm of affairs of the company should also be analysed in depth while assigning weights to different factors affecting the pattern of capitalisation. The management weights to different factors affecting the pattern of capitalisation. The management attitude towards control of the enterprise and risk in particular has to be minutely analysed. Where the management has strong desire for assured and exclusive control, preference with have to be given to borrowing for raising capital in order to be assured to continued control. Further, if principle objective of the management is to stay in office, they would insist more on risk principle and would be loath in issuing bonds or preferred stock which might plunge the company in greater risk and endanger their position.

6.4 MODELS OF CAPITAL STRUCTURE DECISIONS

These approaches analyze the relationship between the leverage, the cost of capital and the value of the firm in different ways. However, the following assumptions are made to understand these relationships:

1. There are only two sources of funds viz., debt and equity.
2. The total assets of firm are given. The degree of leverage can be changed by selling debt to repurchase shares or selling shares to retire debt.
3. There are no retained earnings. It implies that entire profits are distributed among shareholders.
4. The operating profit of firm is given and expected to grow.
5. The business risk is assumed to be constant and is not affected by the financing mix decision.
6. There are no corporate or personal taxes.
7. The investors have the same subjective probability distribution of expected earnings.

The present section will address the different models of capital structure decision and an attempt has been made to evaluate these models.

1. Net Income Approach (NI Approach)

According to this approach, there is an optimal structure where the market price per share of stock is maximum. The significance of this approach is that a firm can lower its cost of capital continually and increase its total valuation by the use of debt funds. Thus, with increased use of leverage overall cost of

capital decline and total value of the firm (value of stock plus value of debt) rises. Leverage is, therefore, an important variable and debt policy decision has a significant influence on the value of the firm.

The basic assumptions of NI approach are:

(a) Only two types of capital are employed - long - term debt and common stock.

(b) The interest cost on debt and the rate at which investors capitalise earnings available to common shareholders are fixed, regardless of the debt-equity ratio.

(c) There is no corporate tax rate.

(d) The borrowing rate is less than the equity capitalisation rate.

(e) The firm's operating earnings of the firm are not expected to grow, i.e. the firm's expected EBIT is the same in all future periods.

(f) The firm's business risk is constant and is independent of its capital structure and financial risk.

(g) The firm is expecting to continue indefinitely.

This approach works like this:

As the proportion of cheaper debt funds in the capital structure increases, the weighted average cost of capital (Ko) decreases and approaches the cost of debt (Ki). Thus, the optimal capital structure, according to the NI approach, is one at which the total value of the firm is the highest and the cost of capital (Ko) is the lowest. The NI approach determines the value of the firm by capitalising net income available to common stock holders and adding to it market value of debt.

Illustration 1: A firm has ₹8 lakhs of debt at 8 per cent, an expected annual net operating earnings (EBIT) of ₹ 18 lakhs and an equity capitalisation rate of 10 per cent. There are no corporate income taxes.

	₹
Net Operating Earnings (EBIT) (O)	18,00,000
Interest on Debt (₹ 8 lakh 8%) (f)	64,000
Earnings Available to Common Stockholders (e)	17,36,000
Market Value of Equity (Equity capitalisation rate X earnings available to common stockholders) 17,36,000/1.10)	1,73,60,000

Market Value of Bonds (b)	8,00,000
Total Value of Firm (v)	1,81,60,000

The overall capitalisation rate (also termed as overall cost of capital) in the above example is:

KO = O/V Where,

KO = Capitalisation rate

O = Net operating income

V= Overall value of the firm.

Substituting the formula with the figures given in the example, implied capitalisation rate is:

$$KO = \frac{18,00,000}{₹\ 1,81,60,000} \times 100$$

= 9.9%

Let us now examine the impact of a change in financing mix on the firm's capitalisation rate and value of the firm.

Illustration 2: A firm increases in debt from ₹8 lakhs to 16 lakhs and uses the cost of debt and equity are held constant at 8 percent and 10 per cent, respectively. The impact of the above change in capital structure on value of the firm will be as follows:

	₹
Net Operating Income	18,00,000
Interest on Debt (₹16 lakh x 8%)	1,28,000
Earnings available to Equity Stockholders	16,72,000
Market Value of Equity	1,67,20,000
Market Value of Debt	16,00,000
Total Value of Firm	₹ 1,83,20,000

This implied overall capitalization rate is:

$$KO = \frac{18,00,000}{₹\ 1,83,20,000} \times 100$$

$$= 9.8\%$$

Thus, use of additional debt has resulted in rise in total value of firm and fall in capitalisation rate. As a result of this, market price per share increases. For example, in the earlier case when the firm had ₹8 lakhs debt with 17,360 outstanding shares, the market price per share was ₹1,000 (1,73,60,000/17,360).

When the firm issues additional debt of ₹8 lakhs and uses the same to retire stock, i.e. 800 stock, the market price per share will be ₹ 1,004 (₹ 1,67,20,000/ 16,560). The NI approach is graphically shown in Fig. The degree of leverage is plotted along the horizontal axis, while cost of equity, debt and overall cost are on the vertical axis. It is evident from the exhibit that cost of equity (Ke) and cost of debt (Ki) remain unchanged regardless of degree of leverage. As the percentage share of debt financing in total capitalisation increases, the overall cost of capital (Ko) tends to drop and approach the cost of (Ki). The optimal capital structure would be the one at which cost of capital is the lowest and the total value of the firm is maximum.

Evaluation of NI Approach

This approach gives idea on the impact the debt has on overall cost of capital. Furthermore, the approach emphasises that recourse to debt financing increases net income before tax and hence the value of equity shares in the market.

However, NI approach fails to recognise that incorporation of additional doses of debt increases the risk in the firm. In real world, when a firm is heavily indebted, the equity stockholders would perceive increase in risk. They would dispose of their stock. As a result, the market value of equity stock will decrease. Thus, the very objective of maximising the value of the firm will be defeated. NI approach cannot, therefore, be considered adequate for capital structure management.

2. Net Operating Income (NOI) Approach

According to NOI approach total value of a firm remains unaffected by its capital structure. Whatever benefits results from debt financing, it will be offset by the rise in cost of equity capital with the result that overall cost of capital remains unaffected for all the degrees of the financial leverage and therefore, there is no optimal capital structure and investors are indifferent to change in capital structure.

Operating features of this approach are:

i) Total market value of the firm (V) is obtained by capitalising net operating income (EBIT) at the overall cost of capital (Ko) which is constant.

Thus, V = EBIT/Ko

ii) Total value of the stock is found by subtracting the value of debt from total market value of the firm.

iii) The cost of equity (EBIT-F)/s tends to rise in correspondence with an increase in the degree of leverage.

iv) The overall cost of capital is an average of the costs of debt and equity.

Thus, the NOI approach states that the real cost of debt and the real cost of equity are the same. These costs are equal to Ko (overall cost of capital). Ko is based on expected return from operations of the firm rather than on capital structure.

To illustrate how value of the firm is determined under NOI approach, we use the same data as employed in the NI approach. Thus, the firm is assumed to have ₹ 8 lakhs of debt of 8 per cent, as expected EBIT of ₹ 19 lakhs and an overall capitalisation rate of 10 per cent Total value of the firm is calculated as follows:

Illustration 3

NOI (EBIT)	₹ 18,00,000.00
Total Value of the Firm=EBIT/Ko=	₹ 18,00,000.00.10
	₹ 1,80,00,000.00
Market Value of Debt (B)	₹ 8,00,000.00
Market Value of Stock (s)	1,72,00,000.00

Given the value of the stock, we can now calculate the cost of equity capital as below:

$$Ke = \frac{EBIT - F}{S} = \frac{₹\ 18,00,000 - .08\ (₹\ 8,00,000)}{1,72,00,000}$$

=101 or 10.1%

The weighted average cost of capital or overall capitalisation rate can now be calculated:

$$Ko = Ki\,(B/V) + Ke\,(S/V)$$

$$= \frac{8}{8\%\ (180)} + \frac{172}{10.1\%(180)}$$

$$= 10\%$$

Thus, the average cost of capital or overall capitalisation rate is 10 per cent, just as the NOI approach says it should be. If debt is increased from ₹8 lakhs to ₹ 16 lakhs and proceeds are used for retiring stock, the value of the firm would remain constant at ₹ 1,80,00,000, the value of the stock would drop to ₹ 1,64,00,000 and cost of equity capital would rise to 10.2 per cent.

Illustration 4

NOI (EBIT)	₹ 18,00,000
Value of the Firm (V) (EBIT/Ko)	₹ 1,80,00,000
Market Value of Debt (b)	₹ 16,00,000
Market Value of Stock (s)	₹ 1,64,00,000

Equity capitalization rate of cost of equity capital will be:

$$Ke = \frac{EBIT - F}{S} = \frac{18,00,000 - .8\,(16,00,000)}{1,64,00,000}$$

$$= 10.2\%$$

Overall cost of capital or capitalisation rate will remain constant at 10 per cent as calculated below:

$$Ko = 8\%\ (16/180)\ (164/180) = 10.2$$

= 10%

We, thus, see that cost of equity capital (Ke) rises with the degree of leverage with the result that it consumes the leverage benefit flowing from debt financing. Since cost of capital and overall value of the firm remain unaffected by change in capital and overall value of the firm remain unaffected by change in capital structure, market price per share of the firm when no additional debt is taken, is ₹ 1,72,00,000/17,360 = ₹ 991. With induction of additional debt of ₹8 lakhs, the market price per share will at ₹ 991 (₹1,64,00,000/16,560) the same as before. Thus, all capital structures are optimal and investors are indifferent to change in capital structure.

The NOI approach is clearly identified with the theory propounded by Modigliani and Miller who strongly support NOI on the basis of their theoretical and empirical research.

This approach focuses on the role of net operating income in the determination of total value of the firm. NOI approach rightly recommends that net investment proposals should be accepted on the basis of the relationship of NOI to total value and not on the basis of the relationship between the source of financing and the return from an investment project.

However, NOI approach does not accept the existence of the concept of optimal capital structure. This is against the perceived risks of different financing mixes. If the risks and benefits of leverage do not exist, then the purpose of regulating debt-equity mix is meaningless.

3. Traditional model to capital structure and valuation of enterprise

Traditional theorist believes that up to a certain point a firm can, by increasing proportion of debt in its capital structure, reduce cost of capital and raise market value of the stock. Beyond that point, further induction of debt will cause the cost of capital to rise and market value of the stock to fall. Thus, through a judicious mix of debt and equity the firm can minimise overall cost of capital structure. After a certain point overall cost of capital begins to rise faster than the increase in earnings per share as a result of application of additional debt.

Traditional view with respect to optimal capital structure can better be appreciated by categorising the market reaction to leverage in three stages.

Stage I: The first stage begins with the introduction of debt in the firm's capitalisation. As a consequence of the use of low cost debt the firm's net income tends to rise. Cost of equity capital (Ke) rises with the

additional dose of debt but the rate of increase will be less than the rise in the earnings rate. Cost of debt (Kd) remains constant or rises only modestly. Combined effect of all these will be reflected in increased market value of the firm and decline in overall cost of capital (Ko).

Stage II: In the second stage, further application of debt will enhance cost of debt and equity share capital so sharply as to offset the gains in net income. Hence, the total market value of the firm remains unchanged.

Stage III: After a critical turning point, any further does of debt to capitalisation will prove fatal. The cost of both debt and equity will tend to rise as a result of the increasing riskiness of each causing an increase in the overall cost of capital which will be faster than the rise in earnings from the introduction of additional debt. Consequent upon this, market value of the firm will show depressing tendency.

The following illustration will explain the traditional approach.

Illustration 5: Following financial data are available about A.B.C. Ltd.

Expected net operating income ₹6,00,000

Debt ₹ 6,00,000 @ 12% Equity Capitalisation Rate 15%

Equity Share Capital ₹24,00,000

What will be the effect of the following actions on the valuation and K_o?

(a) If the Company raises further debt of ₹ 8,00,000 at 12% and the net operating income is expected to increase by ₹ 1,20,000 and

(b) With increase in leverage, the equity capitalisation rate increase to 18%.

Solution:

(a) (i) Valuation of the Company with existing capital structure, viz., ₹16,00,000 as debt and ₹ 24,00,000 as equity.

NOI	6,00,000
Less: Interest on Debt (24,00,000 x 12%)	1,92,000
Earnings Available to Equity Stock Holders	4,08,000
Ke	100/15
Market value of Equity Stock	27,20,000
Add Market Value of Debt	16,00,000

Total Value of Company	43,20,000
Overall Cost of Capital	6,00,000 x 100
	43,20,000
	= 13.89%

(ii) Valuation of the company with new capital structure, viz., ₹ 24,00,000 ₹ 24,00,000 debt equity.

		₹
NOI		
Less: Interest on Debt (24,00,000 x 12%)		7,20,000
Earnings Available to Equity Stock Holders		2,88,000
Ke		100/15
Market value of Equity Stock		28,80,000
Add Market Value of Debt		24,00,000
Total Value of Company		52,20,000
Overall Cost of Capital	17,20,000 x 100	
	52,80,000	
	= 13.64%	

(b) Valuation of the Company with increase in equity capitalisation rate to 18% and debt equity ratio of 1: 1

		₹
NOI		
Less: Interest on Debt (24,00,000 x 12%)		7,20,000
Earnings Available to Equity Stock Holders		2,88,000
Equity Capitalisation Rate		100
		18
Market value of Equtiy Stock	4,32,000 x $\frac{100}{18}$	

Add: Market Value of Debt	= 24,00,000
Total Value of Comapany	48,00,000
Overall Cost of Capital	$\frac{7,20,000 \times 100}{48,00,000}$
	= 15%

It may be noted from the above that with the increase in leverage from 40:60 to 50:50 the total value of the Company has gone up from ₹43,20,000 to ₹ 52,80,000. This is because the earnings on additional funds of ₹8,00,000 is more than Ke, i.e. 12%.

When the financial leverage was increased and Ke was also increased the value of the company decreased from ₹52,80,000 to ₹ 48,00,000. Thus, with increased risk exposure, value of the company decreased even though financial leverage was favourable.

Overall cost of capital goes down with the increase in favourable financial leverage and without increase in Ke.

Overall cost of capital tends to rise with an increase in Ke.

According to the traditional model the cost of capital would tend to rise and market value of the firm to decline as the firm become more risky consequent upon financing operations with debt capital. Although there is no convincing empirical evidence to support the traditional mode, institution and practice, as evidenced by the behaviour of suppliers of capital as well as by finance managers, seem to suggest that there is indeed a limit to which firm can assume debt without increasing its cost of capital. To exceed certain limits of debt an acceptable range tends to increase both the cost of debt and cost of common stock because the financial risks tend to rise.

However, the model has not been explained as satisfactorily as it should have been. Thus, for instance, a little was offered by way of explanation as to why low cost debt should be substituted for higher cost of equity up to the point. Furthermore, rigorous attempts were not made to define where the optimal point or range may be located. As a result, vague rules of thumb were developed which both firms and financial institutions tended to follow blindly.

4. Modigliani-Miller Model (MM model) to capital structure and valuation of enterprise

Modigliani and Miller supplied rigorous challenge to the traditional model. According to them, the cost of capital and so also the value of the firm remain unaffected by leverage employed by the firm. Thus,

Modigliani and Miller says that any rational choice of debt and equity would result in the same cost of capital under their assumptions and that there is no optimal mix of debt and equity financing. The independence of cost of capital argument in based on the hypotheses that regardless of the effect of leverage on interest rates, the equity capitalisation rate will rise by an amount sufficient to offset any possible savings from the use of low cost debt. They contend that cost of capital is equal to capitalisation rate of a pure equity stream of income class and the market value is ascertained by capitalising its expected income at the appropriate discount rate for its risk class.

So long as the business risk remains the same, the capitalisation rate (cost of capital) will remain constant. Hence, as the firm increases the amount of leverage in its capital structure, the cost of debt capital remains constant the capitalisation rate (cost of equity capital) will rise just enough to offset the gains resulting from application of low cost debt.

The Modigliani and Miller argument is based on a simple switching mechanism which is simply called 'arbitrage'. They contend that market value of the two firms which are identical except for the difference in the pattern of financing will not vary because arbitrage process will drive the total values of the two firms together. Rational investors, according to them, will employ arbitrage in the market to prevent the existence of the two assets in the same risk class and with same expected returns from selling at different prices. For example, shares of the two firms in the same risk class with equal expected returns cannot to sell at different prices in the market simply because one has applied larger doses of debt than the other. The M-M approach is based on the following assumptions:

(i) Personal and corporate leverages are perfect substitutes.

(ii) There does not exist transaction cost.

(iii) Rate of interest at which company and individuals could borrow is the same.

(iv) Institutional investors are free to deal in securities.

(v) There are no taxes.

(vi) Borrowings are riskless.

(vii) Investors are fully knowledgeable and rational.

The following example will explain the M-M approach.

Illustration 6: Two firms A and B falling in the same risk class have net operating income of ₹5,00,000 each. Firm B has ₹10,00,000 of 5 per cent bonds outstanding and firm. A has all equity. In the initial situation both firms have an equity capitalisation rate of 10 per cent. The following situation will exist.

	Firm A	**Firm B**
Net Operating Income (O)	₹ 5,00,000	₹ 5,00,000
Less: Interest on Debt (E)	---	50,000
Net Income Available to Equity	₹ 5,00,000	₹ 4,50,000
Stock Holders (F) Value of Stock		
(S=F/ka=F/10	₹ 50,00,000	₹ 45,00,000
Value of Debt (B)	0	10,00,000
(V) B+S	₹ 50,00,000	₹ 55,00,000

Thus, total value of firm B is higher than that of firm A by ₹ 5 lakh. But Modigliani and Miller argue that this situation will exit no longer. Rational investors would adjust their portfolios to take advantages to improve their earnings. Thus, an investor owning 10 per cent of B's stock would sell his stock at ₹ 5,50,000 and buy stock of firm A worth ₹ 4,50,000 and further pledge the new stock as collateral for a loan of ₹ 1,00,000 in order to buy additional stock in firm A. The investor has thus introduced the same leverage in his personal account as existed in the corporate account ₹ 1 of debt for every ₹ 4.50 of equity. Similarly, other investors will sell shares of firm B and buy shares of firm A and obtain loan against the new stock for further investments. All this is done just to improve earnings position by assuming the same degree of risk as it was in the earlier case, investor's income position will be as follows :-

Old Income of Firm B= ₹ 4,50,000

New Income of Firm A= ₹ 4,50,000

Thus, investor's stock investment income remains exactly the same as before. Then what was the rationale to switch over to firm's A stock? Definitely investor's earning position will improve in substituting B's stock by A's stock. Investors have obtained loan of ₹1,00,000 against the security of new stock which will be invested elsewhere to increase existing income. This arbitrage process would continue until firm B's shares increased in price so that differences in market values of the two firms are eliminated. At this equilibrium the overall cost of capital (Ko) of the two firms will be the same.

Thus, on the basis of arbitrage, Modigliani and Miller conclude that the financing decision does not help in any way in maximisation of market price per share. In their words, the market value of any firm is independent of its capital structure and is given by capitalising its expected return at the rate appropriate to its (risk) class.

Theoretical validity of the M-M's proposition is difficult to counter. However, the approach has been criticised bitterly by numerous experts questioning the very assumptions on which edifice of the theory is founded.

Limitations of M-M Model

Limitations of the M-M approach which have been brought to the force from time to time are as under:

(i) The M-M model seems to have ignored the vital fact that business risk is a function of the degree of the financial leverage. If a firm fail to service the debt during the lean periods, it is very likely to collapse and will, therefore, not survive to reap the benefits of leverage during the lean periods. Further, bankruptcy involves high costs and probability of the firm having to bear these costs tends to rise with leverage.

(ii) M-M's argument that there is no difference between personal and corporate leverage does not true in actual practice. As a matter of fact, investors' prefer corporate leverage to personal leverage. Higher interest rates on individual than corporate debt and stiffer margin regulations in the case of personal borrowing encourage the use of debt financing by companies. This would make the investors loath towards personal leverage. Modigliani and Miller would make the investors loath towards personal leverage. Modigliani and Miller have answered these charges by pointing out that the existing practices justify their assumptions. Further, the arbitrage process may not be confined to individuals. The free entry of the financial intermediaries in the market without cost which they do so if opportunities for profit in respect of dealing in securities exist, will assure the efficient functioning of the arbitrage process which, in turn, will result in the prevalence of corporate leverage.

(iii) Another objection hailed against the M-M's proposition is that it would not be realistic to assume that there are no restrictions on institutional investors with respect to their dealing in securities. In real life situations, many institutional investors are not allowed to engage in the 'home made' leverage. Furthermore, Reserve Bank of India regulates margin requirements in respect of different types of loans and has stipulated the percentage of advances under a margin loan. As a result, a significant number of investors cannot substitute personal leverage for corporate leverage.

(iv) It is also unrealistic to presume that there are no transaction costs. In actual practice security dealers have to incur brokerage, underwriting commission and similar other costs in buying and selling corporate securities. Consequently, effectiveness of the arbitrage mechanism may be impeded. Arbitrage will take place only upto the limits imposed by transaction costs, after which it is no longer profitable. As a result, the leverage firm could have slightly higher total value.

(v) The assumption of no corporate tax is basically wrong. Nowhere in the world, has corporate income remained untaxed. Further, everywhere taxation laws have provided for deductively of interest payments on debt for calculating taxable income. If this is so, debt becomes relatively much cheaper means of financing and the financial manager is naturally encouraged to employ leverage. For that very reason debt may be preferred to preferred and common stocks.

Consideration of Tax Factor in M-M Approach

Following strong objections of Ezra Solomon and other prominent financial theorists, M-M modified their earlier stand and agreed with the view that favourable financial leverage can lower the overall cost of capital of a firm if corporation tax is there.

M-M demonstrate that the value of levered firm is higher than the value of unlevered firm because of the fact that interest is a tax deductible expense and due to this more income flows to investors.

Illustration 7: The expected value of annual net operating income for two firms is ₹4,000 before taxes; the corporate tax rate is 50 per cent. The after tax capitalisation rate is 10 per cent for both firms and that firm A has no debt whereas firm B has ₹ 16,000 in 5 per cent bonds. According to the M-M position, the total values of the two firms would be:

	A	**B**
1. Net Operating Income	₹ 4,000	₹ 4,000
2. Taxes	2,000	2,000
3. Profit before interest but after Taxes	₹ 2,000	₹ 2,000
4. After Tax Capitalisation Rate for Debt Free Firm	0.10	0.10
5. Capitalised Value	20,000	20,000
6. Interest on Debt	0	800
7. (I-Tax rate) (6)	0	400
8. Tax Saving on Interest	0	400

9. Interest Rate	5%	
10. Capitalised Value of (8)	0	8,000
11. Total Value of Firm (5) + (10)	₹ 20,000	₹ 28,000

Thus, the higher total value of firm B is due to the deductibility of interest payments. Owing to the tax benefits associated with debt financing firm B could increase its total value with leverage even under the M-M approach.

With taxes the value of a firm according to M-M is

$$V = \frac{O\,(I-t)}{r} + D$$

Where,

v = value of the firm

t = Corporate tax rate

r = Capitalisation rate applicable to the unlevered company

O = Expected net operating income

D = Market value of debt

It is, thus, evident that M-M model recognises that because of corporate income taxes, the firm can lower its cost of capital and raise its value by continually increasing leverage in its capitalisation. They suggest that in order to achieve optimal capital structure the firm should strive for the maximum amount of leverage. In refreshing contrast to this, traditional model pleads that cost of capital would tend to rise with the extreme leverage owing to increased financial risk. Therefore, the optimal capital structure according to the traditional model is not the one that calls for maximum use of debt. The weakest part of the M-M approach, as is evident from the above discussion, is noticeable when leverage is extreme. The firm cannot afford to go on borrowing funds, recklessly in its bid to maximise its value as is suggested by M-M because beyond a certain point of leverage the firm would assume considerable financial risk resulting in higher interest and bankruptcy cost. In support of their argument M-M suggest that the firm should adopt a target debt equity ratio so as to keep itself within the limits on leverage imposed by

creditors. The introduction of debt limits implies that the cost of capital rises beyond a point and there exists optimal capital structure.

6.5 CHECK YOUR PROGRESS

1. _____refers to the mix of a firm's capitalization and includes long term sources of funds.

   (A) Leverage (B) Capital structure

   (C) Debt mix (D) Owner's equity

2. The term "capital structure" refers to:

   (A) Current assets & current liabilities

   (B) Long-term debt, preferred stock, and common stock equity

   (C) Total assets minus liabilities

   (D) Shareholders' equity

3. Which of the following statement is false?

   I. In case the firm wants to grow at a faster pace, it would be required to incorporate debt in its capital structure to a greater extent.

   II. If the firm has no long-term debt in its capital structure, it means that either it is risk-averse or it has a cost of equity capital or cost of retained earnings less than the cost of debt.

   Select the correct answer from the options given below.

   (A) Statement I is true while Statement II is false.

   (B) Statement I is false while Statement II is true.

   (C) Both Statement I and Statement II are false.

   (D) Both Statement I and Statement II are true.

4. While designing a capital structure a finance manager should choose a pattern of capital which –

   (A) Minimizes cost of capital

   (B) Maximizes the owner's return.

   (C) Maximizes the cost of capital and minimizes the owner's return.

   (D) Both (A) and (B)

5. Which of the following is not included in the capital structure?

   (A) Long term debt

   (B) Preferred stock,

(C) Current assets

(D) Retained earnings

6.6 SUMMARY

Mix of long-term sources of finance is referred as capital structure. At optimum capital structure, the cost of capital is minimum and market price per share is maximum. In planning the capital structure, one should keep in mind that there is no one definite model that can be suggested/used as an ideal for all business undertakings. To obtain a balanced capital structure it is necessary to consider the ability of the company to market corporate securities. Small companies rely heavily on owners' funds while large companies are generally considered to be less risky by the investors and therefore, they can issue different types of securities. The Net Income (NI) approach is the relationship between leverage and cost of capital and value of the firm. According to the NOI approach, the market value of the firm depends upon the net operating profit or EBIT and the overall cost of capital, WACC. According to Modigilani-Miller approach, the value of a firm is independent of its capital structure.

6.7 KEYWORDS

- **Capital Structure:** It is that part of financial structure, which represents long-term sources.
- **Optimum Capital Structure:** It is that capital structure where market value per share is maximum and the cost of capital is minimum.
- **MM Theory:** According to this theory the value of the firm is independent of its capital structure.
- **Net Income Approach:** According to this approach, the cost of debt and the cost of equity do not change with a change in the leverage ratio.
- **NOI Approach:** According to this approach, the market value of the firm is not affected by the capital structure changes.

6.8 SELF ASSESSMENT TEST

Q.1 "In making capital structure decision finance manager faces the problem of striking compromise among conflicting but equally important principles of control, cost, risk and flexibility". Comment upon this statement.

Q.2 Spell out the financial considerations that should be taken into account while reaching capital structure decision.

Q.3 Should finance manager take into consideration environmental factors while taking capital structure decisions?

Q.4 What sort of capital structure would you propose for a company if its primary objectives were?

(a) To maximise the possible income for common stockholders?

(b) To assure control with a minimum investment?

(c) To minimise fluctuations in earnings per share on common stock?

Q.5 If management agrees that the chances are about 8 out of 20 that earnings will remain above the break-even point, should they agree to resort to debt financing? What might deter them from doing so?

Q.6 How would the capital structure of a trading concern different from that of a manufacturer of trucks? What are the reasons for any differences that might exist?

Q.7 What differences in typical structures within the industry might you expect to find if the industry was characterised by greater price competition?

Q.8 What is traditional approach to the concept of capital structure?

Q.9 Explain the position of M-M approach on the issue of an optimal capital structure, admitting to the existence of the corporate income tax.

Q.10 Evaluate the merits and demerits of each of the capital structure model.

6.9 ANSWERS TO CHECK YOUR PROGRESS

1. B
2. B
3. D
4. D
5. C

6.10 REFERENCES/SUGGESTED READINGS

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Subject: Financial Management	
Course Code: BC 502	**SLM Conversion By:** Ms. Chand Kiran
Lesson No.: 7	

CAPITAL BUDGETING DECISION

STRUCTURE

7.0 Learning Objectives

7.1 Introduction

7.2 Capital Budgeting and its Concepts

- 7.2.1 Types of Capital Budgeting Decision
- 7.2.2 Importance of Capital Budgeting
- 7.2.3 Process of Capital Budgeting
- 7.2.4 Investment evaluation Criteria
- 7.2.5 Limitations of Capital Budgeting

7.3 Check your progress

7.4 Summary

7.5 Keywords

7.6 Self-Assessment Test

7.7 Answers to Check Your Progress

7.8 References/Suggested Readings

7.0 LEARNING OBJECTIVES

The object of the study lesson is to enable the students to understand:

- Types and importance of Capital Budgeting.
- Process of capital budgeting
- Various methods of Capital Budgeting.

7.1 INTRODUCTION

The management of any business organisation has to make two types of decision i.e. short-term

as well as long-term. Income determination and the planning and controlling of operations primarily have a current time-period orientation, i.e. short-term decisions. On the other hand, a long range planning has a long-term perspective. These long-range decisions relate to capital budgeting which implies the budgeting of expenditure on capital assets. There is a great deal of controversy among the financial analysts as to the exact meaning of capital expenditure. To some people, if the returns from expenditures extend beyond a year, it should be treated as capital expenditure. According to another point of view, any expenditure which yields returns beyond 7 years is a capital expenditure. Whatever may be the time dimension of capital expenditure, the decision on capital expenditure has importance because it affects the profitability of the organisation for a fairly long period. Prudence exercise in capital expenditure decisions not only fulfils the short- term objective of better profitability but also caters to the long-term objective of stabilised growth. Decisions in this area are among the most difficult because the future is hard to predict. Because the unknowable factors are many, it becomes imperative that they be collected, properly analysed and measured before a decision is made. Capital budgeting helps a lot in the budgeting of expenditure on capital assets or fixed assets in order to maximise the worth of the firm.

Capital budgeting is applicable to decide whether:

- A new project should be undertaken.
- Existing projects should be abandoned.
- Certain research and development costs should be undertaken.
- Certain existing assets should be replaced with new ones.

An efficient allocation of capital is the most important function in the modern times. It involves decisions to commit the firm's funds to the long term assets. The capital budgeting decision has a direct impact on determining how many new proposals or projects the firm should undertake. Since these projects need to be financed, the capital budgeting process also leads to the identification of the firm's need for capital resources. It also assists in allocating capital among various proposals and projects under consideration by management. Such decisions are of considerable importance to the firm since they tend to determine its value size by influencing its growth, profitability and risk.

7.2 CAPITAL BUDGETING AND ITS CONCEPTS

Capital budgeting is concerned with designing and carrying through a systematic investment programme. According to Charles T. Horngren, "Capital budgeting is a long-term planning for making and financing proposed capital outlays".

According to G.C. Philippatos, "Capital budgeting is concerned with the allocation of the firm's scarce financial resources among the available market opportunities. The consideration of investment opportunities involves the comparison of the expected future streams of earnings from a project with the immediate and subsequent stream of expenditure for it".

Thus, the capital budgeting decision may be defined as the firm's decision to invest its current funds most efficiently in long-term activities in anticipation of an expects flow of future benefits over a series of years. Such decisions may consist addition, disposition, modification, mechanisation or replacement of any fixed asset.

7.2.1 TYPES OF CAPITAL BUDGETING DECISION

Broadly speaking, capital budgeting decisions are long-term investment decisions. They include the following:

(a) Mechanisation of a Process - A firm may intend to mechanise its existing production process by installing machine. The machine is estimated to cost ₹1,50,000 and expected to save operating expenses of ₹25,000 per annum for a period of ten years. Thus, it is an investment decision involving cost outlay for ₹1,50,000 and an annual saving of ₹25,000 for 10 years. The firm would be interested in analysing whether it is worth to install the machine.

(b) Expansion Decisions - Every company wants to expand its existing business. In order to increase the scale of production and sale, the company may think of acquiring new machinery, addition of building, merger or takeover of another business etc. This all would require additional investment which be evaluated in terms of future expected earnings.

(c) Replacement Decisions - A company may contemplate to replace an existing machine with a latest model. The use of new and latest model of machinery may possibly bring down operating costs and increase the production. Such replacement decision will be evaluated in terms of savings in operating costs and increase in annual profits.

(d) Buy or Lease Decisions - Capital budgeting is also helpful in making buying or lease decisions. The fixed assets can be purchased or arranged on lease arrangements. Such decisions create a great

different in the demand of capital. Hence, a comparative study can be made with reference to future benefits from these two mutually exclusive alternatives.

(e) Choice of Equipment - A company needs an equipment (plant or machinery) to perform certain process. Now a choice can be made between semi-automatic machine and fully automatic machine. Capital budgeting process helps a lot in such selections.

(f) Product and Process Innovation - The research and development department of accompany may suggest that a new product should be manufactured and/or a new process should be introduced. The introduction of new product and/or a new process will involve heavy capital expenditure and will earn profits also in the future. So, inflows (i.e. future operating income) will be very useful and the ultimate decision will depend upon the profitability of the product and/or process.

(g) House-Keeping Projects - House-keeping projects are such projects which exert indirect impact on the production. They are financed either on account of legal necessity or to boost up the morale and motivation level of the employees, say:

(i) Health and Safety Projects.

(ii) Service Department Projects

(iii) Welfare Projects

(iv) Education, Training and Development Projects

(v) Status Projects

(vi) Research and Development Projects.

The decisions relating to financing of above-mentioned long-term projects are not made on the basis of profitability. They are approved or rejected in terms of their urgency, need, compulsion and desirability. Hence, no profitability analysis is made for them. The capital budgeting decisions exclude decisions regarding current assets. The management and investment problems of current assets are discussed under the head working capital management. The capital budgeting decisions are concerned with only those type of decision areas which have long-term implications for the firm in terms of current expenditure and future benefits. Current expenditure constitutes the outflow of cash and is represented by cost. The future benefits are measured in terms of annual cash inflows. Hence, in capital budgeting, it is the flow of cash-outflow and inflow which is important, not the earnings determined in accordance with the accrual concept of accounting.

7.2.2 IMPORTANCE OF CAPITAL BUDGETING

Capital budgeting decisions are among the most crucial and critical business decisions. The selection of the most profitable assortment of capital investment can be considered a key function of management. On the other hand, it is the most important single area of decision-making for the financial executives. Actions taken by management in this area affect the operations of the firm for many years to come. The need and importance of capital budgeting can be numerated as follows:

1. Heavy Investment - Almost all the capital expenditure projects involved heavy investment of funds. These funds are accumulated by the firm from various external and internal sources at substantial cost of capital. So their proper planning becomes inevitable.

2. Permanent Commitment of Funds - The funds involved in capital expenditures are not only large but more or less permanently blocked also. Therefore, these are long-term investment decisions. The longer the time, the greater the risk is involved. Hence, a careful planning is essential.

3. Long-term impact on profitability - The capital expenditure decisions may have a great impact on the profitability of the firm for a very long time. If properly planned, they can increase not only the size, scale and volume of scales but firm growth potentiality also.

4. Complicacies of Investment Decisions - The long-term investment decisions are more complicated in nature. They entail more risk and uncertainly. Further, the acquisition of capital assets is a continuous process. So the management must be gifted ample prophetic skill to peep into future.

5. Worth Maximisation of Shareholders - Capital budgeting decisions are very important as their impact on the well-being and economic health of the enterprise is far reaching. The main aim of this process is to avoid over- investment and under-investment in fixed assets. By selecting the most profitable capital project, the management can maximize the worth of equity shareholder's investment.

Thus, the significance of capital budgeting decisions becomes quite obvious. The other facts for its significance can be summarised as follows:

a. Management loses its flexibility and liquidity of funds in making investment decisions, so it must consider each proposal very thoroughly.
b. Asset expansion is fundamentally related to future sales and assets acquisition decisions are based on capital budgeting.

c. The funds available for a firm are always in scarcity so they must be properly planned. Modern industrial organisations are characterised by large scale production and intensive mechanisation. This all requires balanced and properly planned allocation of scarce capital resources to the most profitable investment proposals. Hence, the process of capital budgeting has become very significant now-a-days. Therefore, the financial executives plan capital budgets often years in advance.

7.2.3 PROCESS OF CAPITAL BUDGETING

Capital budgeting decisions of a firm have a pervasive influence on the entire spectrum of entrepreneurial activities. Hence, they require a complex combination and knowledge of various disciplines for their effective administration, such as, Economics, Finance, Mathematics, Economic Forecasting, projection Techniques and Techniques of Financial Engineering and Control. In order to combine all these elements, a finance manager must keep in mind the three dimensions of a capital budgeting programme: Policy, Plan and Programme. These three P's constitute a sound capital budgeting programme. However, the important steps involved in the capital budgeting process are: (i) project generation; (ii) project evaluation, (iii) project selection; and (iv) project execution. These steps are necessary, but more may be added to make the process more effective. Joel Dean a famous economist has described the specific elements in an orderly investment programme which are as follows:

1. Creative Search for Profitable Opportunities - The first stage in the capital expenditure programme should be the conception of a profit making idea. It may be rightly called the origination of investment proposals. The proposals may come from a rank and file worker of any department or from any line executive. To facilitate the origination of such ideas a periodic review and comparison of earnings, costs, procedures and product line should be made by the management on a continuous basis.

2. Long-range Capital Plans- When a specific proposal is made to management, its consistency with the long-range plans of the company must be verified. It requires the determination of over-all capital budgeting policies beforehand based upon the projections of short and long-rum developments.

3. Short-range Capital Budget- Once the timelines and priority of a proposal have been established, it should be listed on the one-year capital budget as an indication of its approval.

4. Measurement of Project Worth- This stage involves the tentative acceptance of the proposal with other competitive projects, within the selection criteria of the company. Small projects under a

certain rupee amount could be approved by the departmental head. Larger projects should be ranked according to their profitability. Any one or more tests of profitability may be used for it. For project evaluation, different techniques may be used, such as, payback period, accounting rate of return and discounted cash flow techniques.

5. Screening and Selection - This stage involves the comparison of the proposal with other projects according to criteria of the firm. This is done either by financial manager or by a capital expenditure planning committee. Such criteria should encompass the supply and cost of capital and the expected returns from alternative investment opportunities. Once the proposal passes this stage, it is authorised for outlays.

6. Establishing Priorities - Then comes the stage of establishing the priorities. When the accepted projects are put in priority, it facilities their acquisition or construction, avoids costly delays and serious cost overruns.

This stage is also called the ranking of projects. It helps in capital rationing and better utilisation of capital.

7. Final Approval - Once the financial manager has reviewed the projects, he will recommend a detailed programme, both of capital expenditures and of sources of capital to meet them, to the top management. Possibly, the financial manager will present several alternative capital-expenditure budgets to the top management, it will finally approve the capital budget for the firm.

8. Forms and Procedures - This is a continuous phase that involve the preparation of report for every other phase of the capital expenditure programme of the company.

9. Retirement and Disposal - This phase marks the end of the cycle in the life of a project. It involves more than the recovery of the original cost plus and adjustment for replacement programmes. The old assets should be sold and realised sale price should be used for replacement financing.

10. Evaluation - An important step in the process of capital budgeting is an evaluation of the programme after its implementation. The evaluation process answers such questions, say, was the investment greater than anticipated? Were the expected net cash inflows actually realised? Was the proper test of evaluating the profitability of project applied? Management can improve its capital budgeting programme for the future from past experience. Such evaluation has also the advantage of forcing departmental heads to be more realistic in their approach and careful in actual execution of the projects.

7.2.4 INVESTMENT EVALUATION CRITERIA

Because of the utmost importance of the capital budgeting decisions, a sound appraisal method should be adopted to measure the economic worth of each investment project. In most business firms, there are more than one investment proposals for a capital project than the firm is capable and willing to finance. Here the problem of ranking them in order of preference arises. Hence, the management has to select the most profitable project or to take up the most profitable project first. As we know that the ultimate goal of financial management is the worth maximisation of the firm, hence, in order to achieve this objective, the management must select those projects which deserve first priority in term so their profitability. For evaluating the comparative profitability of capital projects many methods have been evolved. Each method has its own merits and demerits. However, the method going to be used should, at least, possess the following characteristics:

a. It should provide a means of distinguishing between acceptable and unacceptable projects.
b. It should provide clear cut ranking of the projects in order of the profitability or desirability.
c. It should also solve the problem of choosing among alternative projects.
d. It should be a criterion which is applicable to any conceivable investment projects.
e. It should emphasize upon early and bigger cash benefits in comparison to distant and smaller benefits.
f. In the last but not the least, the method should be suitable according to the nature and size of capital project to be evaluated.

Method of Evaluating Investment Proposals

The various methods which are commonly used for evaluating the relative worth of investment proposals are as follows:

I. Non-discounted cash flow Techniques (NDCF)

(A) Payback Period Method (PB)

(B) Accounting Rate of Return Method (ARR)

II. Discounted Cash Flow Techniques (DCF)

(A) Net Present Value Method (NPV)

(B) Present Value Index Method or Benefit-Cost Ratio Method (BCR) or Profitability Index Method (PI)

(C) Internal Rate of Return Method (IRR)

It is important to note here that different methods may give different conclusions and different firms may use different methods. Which method is appropriate for a particular purpose of the firm will depend upon the circumstances. A large sized firm may use more than one method to evaluate each of its investment projects, while a small firm may apply only one technique which involves minimum funds and time. Moreover, these techniques assist the management only in taking objectively sound decisions. They do not provide the answer. The management has still to exercise its common sense, intuition and judgement in making final decisions.

1. Non-discounted cash flow Techniques (NDCF)

(A) Payback Period Method (PB)

This method is also known as pay-off, pay-out or recoupment period method. It gives the number of years in which the total investment in a particular capital project pays back itself. This method is based on the principle that every capital expenditure pays itself back over a number of years. It means that it generates income regularly during its estimated economic life. When the total cash inflows from investment equals the total outlay, that period is the payback period of that project. While comparing between two or more projects, the project with lesser payback period will be acceptable.

Calculation or Payback Period - The payback period can be calculated in the following manner:

(a) In the case of even cash inflows: If the pattern of annual cash inflow is of conventional character or they are in the form of annuity, the computation of payback period is very simple, as follow:

$$\text{Payback Period} = \frac{\text{Initial Investment}}{\text{Annual Cash Inflow}}$$

For example, if an investment of ₹10,000 in a machine is expected to produce annual cash inflow of ₹ 2,500 for 6 years, then

$$\text{Payback Period} = \frac{₹\ 10,000}{₹\ 2,500}$$

$$= 4 \text{ yrs.}$$

(b) In the case of uneven cash inflows - When a project's cash flows are not equal, but vary from year to year, i.e., they are of non-conventional nature, the calculation of payback period takes a cumulative

form of annual cash inflows. In such a situation, payback period is calculated by the process of cumulating cash inflows till the time when cumulative cash inflows become equal to the original investment outlay. The following example will illustrate the point.

Illustration 1: A project requires an investment of ₹10,000. Its estimated annual cash inflows have been given below:

Year	Annual Cash Inflows (ACF) (₹)	Cumulative Cash Inflows (CCF) (₹)
1	2,500	2,500
2	3,500	6,000
3	4,000	10,000
4	5,000	15,000
5	3,000	18,000

Thus, ₹10,000 is recovered fully in 3rd year, hence, payback period is 3 yrs.

Illustration 2: A project requires an investment of ₹10,000 and its estimated annual cash inflows are as follows:

Year	(ACF) (₹)	(CCF) (₹)
1	2,000	2,000
2	3,000	5,000
3	4,000	9,000
4	2,000	11,000
5	3,000	14,000

Here, payback period will be = 3 years + (10000 – 9000)/ 2000

= 3.5 yrs.

Accept-Reject Criterion - The payback period can be used as a decision- criterion to accept or reject investment proposals. If only one independent project is to be evaluated its actual payable period should be compared with a pre-determined (standard) payback, i.e., the payback set up by the management in terms of maximum period during which the initial investment must be recovered. If the actual payback

period is less than the standard payback period, the project would be accepted, if not, it would be rejected. Alternatively, the payback can be used as a ranking method also. When mutually exclusive projects are under consideration they may be ranked according to the length of the payback period. Thus, the project having the shortest payback may be assigned rank one, followed in that order so that project with the longest payback would be ranked the lowest.

Merits of Payback Method - The payback period method for choosing among alternative projects is very popular among corporate managers. The chief merits of this method are as follows:

(i) It is easy to understand and simple to compute and communicate to others. Its quick computation makes it favourite among executive who prefer snap answers.

(ii) It gives importance to the speedy recovery of investment in capital assets. So, it is a useful technique in industries where technical developments are in full swing necessitating the replacements at an early date.

(iii) It is an adequate measure for firms with very profitable internal investment opportunities, whose sources of funds are limited by internal low availability and external high costs.

(iv) It is useful for approximating the value of risky investments whose rate of capital wastage (economic depreciation and obsolescence rate) is hard to predict. Since the payback period method weights only early return heavily and ignores distant returns it contains a built-in hedge against the possibility of limited economic life.

(v) When the payback period is set at large number of years and income streams are uniform each year, the payback criterion is a good approximation to the reciprocal of the internal rate of discount.

Demerits of Payback Method - The payback approach, however, suffers from serious limitations also. Its major shortcomings are as follows:

(i) It treats each asset individually in isolation with the other assets. While assets in actual practice cannot be treated in isolation.

(ii) The method is delicate and rigid. A slight change in the division of labour and cost of maintenance will affect the earning and as such it may also affect the payback period.

(iii) It overplays the importance of liquidity as a goal of the capital expenditure decisions. While no firm can ignore its liquidity of safeguarding liquidity levels. The overlooking of profitability and overstressing the liquidity of funds can in no way be justified.

(iv) It ignores capital wastage and economic life by restricting consideration to the projects' gross earnings.

(v) This approach fails to take fully into account the time factor in the value of money; by measuring how quickly the firm recovers its initial investment, it only implicitly considers the timing of cash flows.

(vi) It overlooks the cost of capital which is a main factor in sound capital budgeting decisions.

(vii) Another major weakness of this approach is that it completely ignores all cash inflows arising after the payback period. This could be very misleading in capital budgeting decisions. It may be possible that two projects have similar payback period but their post-payback profitability differs significantly. The following examples will illustrate the point.

	Project A	**Project B**
	(₹)	**(₹)**
Cost of Project	15,000	15,000
Year	Annual Cash Inflows	
1	5,000	4,000
2	6,000	5,000
3	4,000	6,000
4	0	6,000
5	0	4,000
6	0	3,000
Payback period	3 yrs.	3 yrs.

Thus, project B is certainly advantageous as its post-payback profitability is more in spite of similar payback period of 3 years.

	Project x (₹)	**Project y (₹)**
Total Investment	10,000	10,000
Year	Annual Cash Inflows	
1	5,000	3,000
2	5,000	4,000
3	2,000	3,000
4	1,000	4,000
5	50000	2,000
Payback period	2 yrs.	3 yrs.

Thus, the payback period for project x is 2 years and for project y it is 3 years. Obviously, project x will be preferable on the basis of payback period. However, if we look beyond the payback period, we see that project x returns only ₹3,500 while project y returns ₹6,000. Thus, project y should be preferred.

(viii) Another weakness of this method is that it does not measure correctly even the cash flows expected to be received within the payback period as it does not differentiate between projects in terms of the timing or magnitude of cash flows. It considers only payback period as a whole while the pattern of cash flows may affect the value of firm considerably. The following example will illustrate the point.

	Project O (₹)	**Project P (₹)**
Total Cost of the Project	10,000	10,000
Year	Annual Cash Inflows	
1	2,000	5,000
2	3,000	3,000
3	5,000	2,000

Payback period	3 years	3 years

Above example shows that both the projects O and P have the same cash outlays in the zero time period, the same total cash inflows of ₹10,000; the same payback period of 3 years. But intuitively the project P would be preferable as it returns cash earlier than first project. Hence, the internal composition of cash inflows is also very important which should not be ignored.

But inspite of the above mentioned weaknesses, the payback method can be gainfully employed under certain circumstances. In a politically unstable economy, a quick return of investment is a must. Shortest payback period is the only answer to such investments. In case of foreign investments, the firms experiencing severe shortage of liquidity, for assessing short-run and medium term capital projects, the payback period is the only good technique for assessing their profitability. In fact, the payback period is a measure of liquidity of investment rather than their profitability. Thus, the payback period should more appropriately be treated as a constraint to be satisfied than as profitability measure to be maximised.

(B) Accounting Rate of Return Method (ARR)

This method is also known as Financial Statement Method, Return on Investment Method or Unadjusted Rate of Return Method. It is based on operating earnings computed in the Profit & Loss Account, hence, no separate calculations are necessary to compute annual cash inflows. Finding the average rate of return is a quite popular approach for evaluating proposed capital expenditures. Its appeal stems from the fact that the average rate of return is typically calculated from accounting data (i.e. profits after taxes). According to this method, capital projects are ranked in order of their rate of earnings. Projects which yield the highest earnings are selected and others are ruled out. This return on investment can be expressed in several ways as below:

(i) Average Rate of Return on Total Investment - This method established the relationship between the average annual profits to total outlay of capital project, as follows:

$$\text{Average Rate of Return} = \frac{\text{Average Profits (after taxes)}}{\text{Total Outlay of the Project}} \times 100$$

Thus, this method considers whole earnings over the entire economic life of an asset. The project with highest return will be acceptable.

(ii) Earnings Per Unit of Money Invested - As per this method, we find out the total net earnings (after taxes) and then divide it by the total investment. This gives us the average rate of return per unit of amount invested in the project, as follows:

$$\text{Earnings Per Unit of Investment} = \frac{\text{Total Earnings (after taxes)}}{\text{Total Outlay of the Project}}$$

Higher the earnings per rupee, the project deserves to be selected.

(iii) Average Return on Average Investment- Under this method the percentage of average return on average amount of investment is calculated. To calculate the average investment, the outlay of the project is divided by two. ARR is calculated as follows:

$$\text{Average Rate of Return} = \frac{\text{Average Profits (after taxes)}}{\text{Average Investment}} \times 100$$

The average profits after taxes - Average profits after taxes are found by taking the sum of the expected after-tax profits of the project during its life and dividing the sum by the number of years of its life. In the case of an annuity, the average after-tax profits are equal to any year's profits.

The average investments - Any of the following three formulae may be applied to calculate average investment:

(a) $\frac{\text{Initial Investment}}{2}$

(b) $\frac{\text{Initial Investment + Scrap Value}}{2}$

(c) $\frac{\text{Recovered Capital + Scrap Value}}{2}$

The averaging process outlined above assumes that the firm is using straight line method of depreciation.

Merits of ARR Method

The approach has the following merits:

(1) Like payback method it is also simple and easy to understand.

(2) It is based on the accounting concept of operating income and accounting profit figures are used in analysing the profitability of alternative capital projects, hence no separate calculations are required.

(3) It takes into consideration the total earnings from the project during its entire economic life.

(4) This approach gives due weight to the profitability of the project.

(5) In investments with extremely long lives, the simple rate of return will be fairly close to the true rate of returns. It is often used by financial analysts to measure current performance of a firm.

Demerits of ARR Method

This method has a following demerit:

(1) One apparent disadvantage of this approach is this that its results by different methods are inconsistent.

(2) It is simply an averaging technique which does not take into account the impact of various external factors on overall profits of the firm.

(3) The method ignores the time factor of future cash streams which is crucial in business decisions as the amount of interest and discount is substantially affected by it.

(4) This method does not determine the fair rate of return on investments.
It is left at the discretion of the management. Hence, the use of this arbitrary rate of return may cause serious distortions in the selection of profitable projects.

II. Discounted Cash Flow Techniques (DCF)

Although, return on investment has been considered a satisfactory technique of capital budgeting in accounting circles for long. Next came the payback approach which is based on cash flow technique. But the lacuna of the above methods is that they do not take the time factor of the income into account. The earlier receipts are certainly more important than the income to be received in later years. A bird in hand is worth than the two in the bush, is aptly applicable to the management of capital. Accordingly, a rupee in the hand has more worth than a rupee to be received five year later, because the use of money has a cost (interest) just as the use of building or an automobile may have a cost (rent). The DCF techniques take care of these both aspects, i.e., time value of money and cost of capital. As a capital project yields

returns spread over a number of years, correct assessment of its profitability can be made only if the annual returns of the future years are brought to their present value after applying a discounting rate (i.e. cost of capital or interest rate). Similarly, if the investment is to be made over a number of years, the cash outflows have to be brought down to their present value. Thus these techniques recognise time-adjusted rate of return as well as the cost of capital. The aggregate of future cash flows discounted at a given rate of cost of capital is called the present value of those cash inflows.

The calculation of present value consists of the following steps:

(a) Estimating future cash inflows from the project.

(b) Selecting a discount rate which is commonly known as opportunity cost or cost of capital also.

(c) Discounting those cash inflows with the discount factors or present value factors picked up from the present value tables according to the rate of cost of capital.

There are three methods to judge the profitability of different proposals on the basis of discounted cash flow technique. These are as follows:

(A) Net Present Value Method (NPV)

The calculation of net present value (NPV) of project is one of the most commonly used capital budgeting techniques. This method is also known as Excess Present Value of Net Gain Method. The definition of net present value can be expressed as follows:

NPV = Total Present value of Future Cash inflows - Initial Investment. The total present value of future cash inflows is calculated with the help of the following formula:

$$P = \frac{S}{(1+i)^1} + \frac{S_2}{(1+i)^2} + \ldots\ldots\ldots\ldots + \frac{S_n}{(1+i)^n}$$

Where, P = Present Value of future cash inflows.

S = Future Value of cash inflows for n years.

i = Rate of interest

n = number of years (1,2,3,.....)

Based on the above equation, the present value factors tables have been prepared. In these tables, the present value of ₹1 at different rates of interest have been given. The second type of present value

tables provide us the cumulative amount of an annuity of Re. 1 for a given rate of interest. If the annual cash inflows are of even nature, the compound present value factor should be used and if it is of uneven nature, the simple present value factor should be applied. If the NPV is in positive the project should be accepted. If it is in negative, it should be rejected. In mutually exclusive projects, the project with higher NPV should be preferred.

The following example will explain the procedure:

Illustration 3: Suppose a project costs ₹5,000. Its estimated economic life is 2 years. The firm's cost of capital is estimated to be 10%. The estimated cash inflows from the project are ₹2,800 p.a. Calculate its NPV.

Solution: As the firm's cash inflows are of conventional pattern (i.e. even amount), the compound value factor can be used for calculating their NPV.

	₹
Total Present Value = ₹2,800 x 1.813	5,272
Less Cost of the Project	5,000
Net Present Value	272

Merits of NPV Method

(1) The NPV method takes into consideration the time factor of earnings as well as cost of capital.

(2) It is very easy to calculate, simple to understand and useful for simply "accept" or "reject" type of projects.

(3) It can be applied to both types of cash inflows patterns - even and uneven cash inflows.

(4) The NPV method is generally preferred by economists. If one wishes to maximise profits, the use of NPV always finds the correct decisions.

(5) It takes care of entire earnings.

(6) The concept of the present value of series of cash flows is an important feature in the analysis of different investment potentialities. The net present worth technique analyses the merit of relative capital investments in a nice and exact manner.

Demerits of NPV Method

(1) It involves a good amount of calculations. Hence, it is a complicated method.

(2) The use of this method requires the knowledge of cost of capital. If it is unknown, the method cannot be used.

(3) It leads to confusing and contradictory answers for the ranking of complicated projects.

(4) Keeping in view the substantial difference in time-span and involved risk in various capital projects, the use of one common rate of cost of capital for discounting cash inflows is not desirable.

B. Profitability Index Method

This method is also known as Benefit-Cost Ratio. One major demerit of NPV method is that it cannot be applied to compare those mutually exclusive projects which differ in costs substantially. To compare and evaluate such projects, the profitability index should be calculated. The profitability index is the relationship that exists between the present values of net cash inflows and cost outlays of the projects. It can be calculated in two manners:

(i) $$\text{Gross BCR} = \frac{\text{Total Present Values of Cash Inflows}}{\text{Initial Investment}}$$

(ii) $$\text{Net BCR} = \frac{\text{Net Present Values of Cash Inflows}}{\text{Initial Investment}}$$

(Where, NPV of cash inflows in Total Present value of cash inflows minus initial investment)

These both can be expressed in percentage also. Their expression in percentage helps in comparing the relative profitability of capital projects. The higher the profitability index, the more desirable is the investment.

(C) Internal Rate of Return (IRR) Method

The third DCF technique is the Internal Rate of Return Method which is commonly known as Time-adjusted Rate of Return method also. Like the present value method, the IRR method also considers the time value of money by discounting the annual cash inflows. But present value method can be applied only when the discount rate (i.e. cost of capital) is known to us. On the other hand, in IRR technique we find out that rate of return which will equate the present value of future cash streams to the present cash outlay of the project. It is usually the rate of return that the project earns. "It may be defined as the discount rate (r) which equates the aggregate present value of the net cash inflows with the aggregate present value of cash outflows of a project". In other words, "IRR is the maximum rate of interest that could be paid for

the capital employed over the life of an investment without loss on the project". Thus, it is that rate which gives the projects NPV of zero. (134)

Assuming conventional cash inflows, mathematically, the IRR is represented by that rate, r, such that,

$$C = \frac{ACF_1}{(I+r)^1} + \frac{ACF_2}{(I+r)^2} + \frac{ACF_3}{(I+r)^3} + \ldots\ldots + \frac{ACF_n}{(1+r)^n} + \frac{S + W_n}{(1+r)^n}$$

Here:

C = Cost of the Project

ACF = Annual Cash Inflows

S = Scrap Value of the Project

W = Working capital involved and recovered

r = estimated rate of interest

Fortunately tabular values of present values of future earnings are readily available. So, usually these tables are used for this purpose.

Computation of IRR

(a) In the case of even cash inflows - If the cash inflows are uniform each year then the computation of IRR involves the following two steps:

(i) Calculate Present Values Factor by applying the following formula:

$$\text{P.V. Factor} = \frac{\text{Initial Investment}}{\text{Annual Cash Inflow}}$$

(ii) Locate the factor calculated in (i) in the compound Present Value Table on the line corresponding the life span of investment in years. The interest rate of the line of that factor will be the required IRR.

It is to be noted that the present value of cash inflows at this computed rate must be equal to the present value of cash outflows.

Illustration 4: A project costs ₹ 10,000 and is expected to generate cash- inflows of ₹ 1,750 annually for 10 years. Its salvage value is nil. Calculate its IRR.

Solution

P.V. Factor = Investment ÷ Annual Cash Inflow

= 10,000 ÷ 1,750 = 5.714

Locating this factor in the compound present value table on the line corresponding to the 10th year. We find that this factor is most close to the factor in the table at 12%. Hence, the approximate rate of return is 12%.

As the factor given in the table is less than the factor computed above, actual rate will be a bit less than 12%. It can, however, be ascertained by applying the interpolation technique as follows:

$$IRR = r + \frac{V_1 - V}{V_1 - V_2} (r_2 - r_1)$$

$$= 10\% + \frac{+ 6.145 - 5.714}{+ 6.145 - 5.652} \times (12\% - 10\%)$$

$$= 10\% + 1.74\% = 11.74\%$$

Alternative Formula:

$$IRR = r_2 - \frac{V - V_2}{V_1 - V_2} (r_2 - r_1)$$

$$= 12\% + \frac{+ 5.714 - 5.650}{+ 6.145 - 5.650} \times (12\% - 10\%)$$

$$= 12\% - \frac{0.064}{0.495} \times 2$$

= 12% - 0.26% = 11.74%

Where,

r_1 = Lower rate of return

r_2 = Higher rate of return

V_1 = Present value factor at lower rate of return

v_2 = Present value factor at higher rate of return

V = Present value factor for which IRR is to be interpolated

(b) In the case of uneven cash inflows - Here the computation of IRR involves a trial and error procedure. To find the rate of interest that equates the cash inflows with the cash outflows, we start with an assumed rated and calculate the NPV. This NPV may be more than zero, less than zero or just equal to zero. If more than zero, a higher rate of interest should be tried to calculate NPV. Conversely, when the NPV is less than zero, a lower rate would be used. The procedure will go on till we find the rate which gives zero for the NPV.

Under IRR approach, the calculated IRR (i.e. actual rate) is compared with the required rate of return, also known as the cut-off rate or hurdle rate (i.e. the cost of capital or interest rate on which the funds will be available). If the actual IRR is higher than the cut-off rate, the project is accepted, if lower it is rejected.

If the IRR and cut-off are just equal, the firm will be indifferent as to whether to accept or reject the project.

Illustration 5: A project requires an initial outlay of ₹ 32,400. Its estimated economic life is 3 years. The cash streams generated by it are expected to be as follows:

Years	**Estimated ACF (₹)**
1	16,000
2	14,000
3	12,000

Computed its IRR. If the cost of capital to the firm is 12% Advise the management whether the project should be accepted or rejected.

Solution: To compute IRR, we have to follow the trial and error procedure with various rate of interest. The following table presents the calculations:

Table showing calculations of IRR for unequal cash inflows

		Total Present Values at different rate of interest				
Year	ACF	DF at 14%	P.V.	DF at 16%	P.V.	DF at 15%	P.V.
	(₹)		(₹)		(₹)		(₹)
1	16,000	0.877	14,032	0.862	13,795	0.870	13,920
2	14,000	0.769	10766	0.743	10,402	0.756	10,584
3	12,000	0.675	8100	0.641	7,692	0.658	7,896
			32,898		31,886		32,400
Less Cost of Project			32,400		32,400		32,400
			+498		-514		

Since NPV is zero at 15% discount rate, it is its IRR. If the cost of capital is 12%, the project must be accepted as its internal return is 15% while cost of funds is only 12%. The project will contribute 3% to the value of the firm.

Merit of Discount Cash Flow Techniques

(1) This method takes into account the entire economic life of an investment and income therefrom. It gives the true rate of return offered by a new project.

(2) It gives due weight to time factor of financing. It is more suitable for long-term planning. In the words of Charles Horngren. "Because the discounted cash flow method explicitly and routinely weights the time value of money, it is the best method to use for long-range decisions.

(3) It permits direct comparison of the projected returns on investments with the cost of borrowing money which is not possible in other methods.

(4) It makes allowance for difference in the time at which investments generate their income.

(5) This approach by recognising the time factor makes sufficient provision for handling uncertainly and risk. It offers a good measure of relative profitability of capital expenditures by reducing the earnings to their present value.

The concept of "discounted cash flow" has evoked considerable interest in regular commercial enterprises as well as among financial institutions. The World Bank and other financial institutions use

the DCF techniques extensively while measuring the success of new development ventures in order to arrive at sound capital expenditure decisions.

Demerits and Criticism of Discounted Cash Flow Techniques

This method is criticised on the following grounds:

(1) It involves a good amount of calculations. Hence, it is a difficult and complicated one. But this criticism has no force, particularly with the advent of very sophisticated and speedy calculating and other aiding mechanisations.

(2) It is very difficult to forecast the economic life of any investment exactly.

(3) The selection of cash-inflow is based on sales forecasts which is in itself an interminable element.

(4) The selection of an appropriate rate of interest is also difficult.

(5) The DCF approaches do not consider the impact of an investment on accounting profits. The investment may generate a low, or even a negative net cash inflow in early years, but produce high cash inflows in subsequent years. In such cases, the accounting profits of a firm are adversely affected.

But despite these defects, this approach affords an opportunity for making valid comparisons between several long-term competing capital projects. J. Batty has very rightly remarked - "Allowing for these apparent defects there is still a very strong case for using the present value concept. Values and costs should be shown at their true worth, only then can the management accountant say that he is truly representing facts which represent economic realities and not simply a list of unrelated figures. The process of discounting brings them all into present day terms allowing valid comparisons to be made".

7.2.5 LIMITATIONS OF CAPITAL BUDGETING

Following are the limitations of capital budgeting:

(1) Various data such as investment, return, estimated economic life of the asset, to a great extent, are only estimates. Even with all the "knowledgeable factors" collected and duly analysed, there are many unknown factors which cannot be foreseen and which cannot be avoided or controlled.

(2) Financial planning for liquidity and profitability is fraught with many of the same risks that apply to other phases of business activity. The risks of faulty projections of financial requirements are particularly great in the planning of capital expenditures for long-term fixed-asset expansion.

(3) Capital Budgeting process does not take into consideration various non- figure aspects of the project while they play an important role in successful and profit able implementation of them. Hence, non-profitability considerations should also be considered by the management while taking a final decision.

(4) It is also not correct to assume that mathematically exact techniques, always produce highly accurate results.

7.3 CHECK YOUR PROGRESS

1. Capital budgeting deals with:

   a) Long-term decision b) Short-term decisions

   c) Both (a) and (b) d) Neither (a) or (b)

2. The values of the future net incomes discounted by the cost of capital are called –

   (A) Average capital cost

   (B) Discounted capital cost

   (C) Net capital cost

   (D) Net present values

3. The decision to accept or reject a capital budgeting project depends on

   (A) An analysis of the cash flows generated by the project

   (B) Cost of capital that is invested in business/project.

   (C) Both (A) and (B)

   (D) Neither (A) nor (B)

4. Internal Rate of Return (IRR) criterion for project acceptance, under theoretically infinite funds, is:

   Accept all projects which have –

   (A) IRR equal to the cost of capital

   (B) IRR greater than the cost of capital

   (C) IRR less than the cost of capital

   (D) None of the above

5. ___ is the discount rate that should be used in capital budgeting.

   (A) Cost of capital (Ko)

(B) Risk-free rate (Rf)

(C) Risk premium (Rm)

(D) Beta rate (β)

7.4 SUMMARY

Capital budgeting describes the firm's formal planning process for the acquisition and investment of capital and results in a capital budget. Traditional Techniques to analyze Capital budgeting are Payback period and Accounting Rate of Return (ARR). Three discounted cash flow methods used in capital budgeting are Net Present Value Method (NPV); the Profitability Index or Desirability factor and Internal Rate of Return (lRR). The net present value relies on the time value of money and the timings of cash flows in evaluating projects. Internal rate of return is the interest rate that discounts an investment's future cash flows to the present so that the present value of cash inflows exactly equals the present value of the cash outflows.

7.5 KEYWORDS

- **Capital Budgeting:** It refers to planning and deployment of available capital for the purpose of maximizing long-term profitability of the firm.
- **Internal Rate of Return:** The internal rate of return refers to the rate which equates the present value of cash inflows and present value of cash outflows.
- **Profitability Index:** Profitability Index is defined as the ratio of present value of the future cash benefits at the required rate of return to the initial cash outflow of the investment.
- **Pay Back Period**: Pay Back technique estimates the time required by the project to recover, through cash inflows, the firms initial outlay.

7.6 SELF ASSESSMENT TEST

Q.1 What is capital Budgeting? Explain the relevance of capital budgeting decisions from the point of view of an industrial concern.

Q.2 Examine various methods of ranking investment proposals in respect to their relative merits & demerits.

Q.3 "The investment alternative yielding the highest discounted rate of return is the most acceptable". Will this always be true?

Q.4 What do you understand by the term "return on investment"? Do you consider it a yard stick for measuring efficiency? Discuss the various purposes for which this yardstick could be used.

7.7 ANSWERS TO CHECK YOUR PROGRESS

1. A
2. D
3. C
4. B
5. B

7.8 REFERENCES/SUGGESTED READINGS

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Subject: Financial Management	
Course Code: BC 502	**SLM Conversion By:** Ms. Chand Kiran
Lesson No.: 8	

WORKING CAPITAL MANAGEMENT

STRUCTURE

8.0 Learning Objectives
8.1 Introduction
8.2 Concept of Working Capital
  8.2.1 Types of Working Capital
  8.2.2 Importance of Working Capital
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8.0 LEARNING OBJECTIVES

This lesson will make you familiar with:

- Concept and types of working capital
- Importance of working capital
- Factors affecting working capital
- Techniques of working capital forecasting.

8.1 INTRODUCTION

This chapter is aimed to take up issues relating to the management of current assets. The management of current assets is similar to that of fixed assets as far as their analysis of effects on their return and risk is concerned. However, the management of current assets differs from that of fixed assets on account of time involved, liquidity position and its flexibility, as the current assets can be adjusted with sales fluctuations in the short sun. Hence, the firm has a greater degree of flexibility in managing current assets. Working capital management is the functional area of finance that covers all the current accounts of the firm. It is concurred with management of the level of the individual current assets as well as management of total working capital.

8.2 CONCEPT OF WORKING CAPITAL

Working capital or circulating capital indicates circular flow of funds in the day-to-day or routine activities of business. However, this term is used in two ways; in the gross and in the net concept.

In the broad sense, the term ‘working capital’ is used to denote the total current assets. The following are some definitions of this group:

(1)"Working Capital means current assets". -Mead, Baker, Malott.

(2)"The sum of the current assets is working capital of a business". -J.S. Mill.

(3)"Any acquisition of funds which increases the current assets increases working capital also, for they are one and the same". - Bonneville

(4)"Working capital refers to a firm’s investment in short-term assets-cash, marketable securities, accounts receivable and inventories". - Wston& Brigham

In the narrow sense, the working capital is regarded as the excess of current assets over current liabilities. This has been the most commonly used concept by financial experts and authors emphasizing the accounting phase of finance.

They include the name of E.E. Lincoln, E.A. Saliers, C.W. Gerstenbergh, etc. Gerstenbergh defines it as follows: "It has ordinarily been defined as the excess of current assets over current liabilities". According to Hoagland, "Working capital is description of that capital which is not fixed. But the more common use of the working capital is to consider it as the difference between the book value of the current assets and the current liabilities". Likewise, "It is that portion of a firm’s current assets which is financed by long-term funds".

Thus, there is no difference in these viewpoints over the true concept of working capital. The true difference is on its quantity. The total capital assets approach refers to the gross working capital while current assets minus current liabilities approach refers to net working capital. The total current assets approach has a broader application and it is more inviting to the financial management. It takes into consideration all the current resources of the enterprise, from whatever source derived and their application to the current and future activities of the enterprise. In the words of Walker and Baughn, "A good current ratio may mean a good umbrella for creditors against rainy day, but to the management it reflects faulty financial planning or presence of ideal assets or over capitalisation". Actually speaking, a successful financial executive is interested not in maintaining a good current ratio but in maintaining an adjustable account of current assets so that the business may operate smoothly. That's why, if the term 'working capital' is used without further qualification, if refers to the gross working capital.

8.2.1 TYPES OF WORKING CAPITAL

Working capital can be classified either on the basis of its concept or on the basis of periodicity of its requirements.

(a) On the Basis of Concept. On the basis of its concept, it may be either gross working capital or net working capital. Gross working capital is represented by the total current assets. The net working capital is the excess of current assets over current liabilities.

(i) Gross Working Capital = Total Current Assets

(ii) Net Working Capital = Current Assets-Current Liabilities

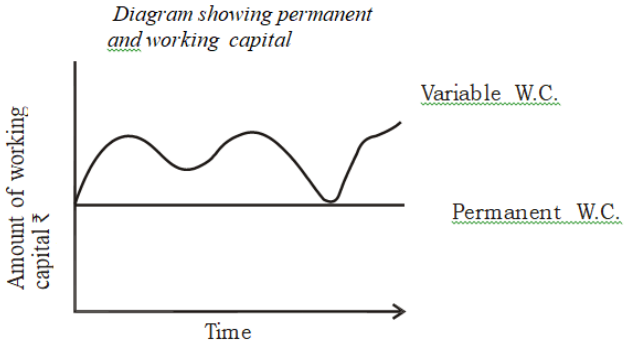
(b) On the Basis of Requirements. According to Gerstenbergh, the working capital can be classified into two categories on the basis of time and requirement:

(i) Permanent Working Capital. It refers to the minimum amount of investment which should be there in the fixed or minimum current assets like inventory, accounts receivable, or cash balance etc., in order to carry out business smoothly. This investment is of a regular or permanent type and as the size of the firm expands, the requirement of permanent working capital also increases. Tandon Committee has referred to this type of working capital as "hard core working capital".

(ii) Variable Working Capital. The excess of working capital over permanent working capital is known as variable working capital. The amount of such working capital keeps on

fluctuating from time to time on the basis of business activities. It may again be sub-divided into seasonal and special working capital. Seasonal Working Capital is required to meet the seasonal demands of busy periods occurring at stated intervals. On the other hand, special working capital is required to meet extra-ordinary needs for contingencies. Events like strike, fire, unexpected competition, rising price tendencies or initiating a big advertisement campaign require such capital.

The following diagram illustrates the difference between permanent and variable working capital.



Operating Cycle

Every business undertaking requires funds for two purpose-investments in fixed assets and investment in current assets. Funds required investing in inventories, debtors and other current assets keep on changing shape and volume. For example, a company has some cash in the beginning. This cash may be paid to the suppliers of raw-materials, to meet labour costs and other overheads. These three combined would generate work-in-progress which will be converted into finished goods on the completion of the production process. On sale, these finished goods get converted into debtors and when debtors pay, the firm will again have cash. This cash will again be used for financing raw materials, work-in-progress, finished goods and debtors etc. So the cycle is completed on the conversion of these currents assets into cash. This time period is simply known as the working capital cycle of the firm. In other words, Working Capital Cycle indicates the length of time between a firm's paying for materials entering into stock and receiving the cash from the sale of finished goods. In a manufacturing firm, the duration of time required to complete the sequence of events is called operating cycle.

In case of a manufacturing company, the operating cycle is the length of time necessary to complete the following cycle of events:

(i) Conversion of cash into raw materials.

(ii) Conversion of raw materials into work-in-progress;

(iii) Conversion of work-in-progress into finished goods;

(iv) Conversion of finished goods in accounts receivable, and

(v) Conversion of accounts receivable into cash.

Hard Core Working Capital

"Hard Core" working capital represents the minimum amount of investment in raw materials, work-in-progress, finished goods, stores and spares, accounts receivable and cash balance which an industrial undertaking is required to carry on a certain level of activity. This part of the investment in current assets is as permanent as the investment in fixed assets. In other words, this is the irreducible minimum amount of current assets required throughout the year for maintaining the circulation of current assets. For example, every industrial undertaking is required to maintain a minimum stock of raw materials, work-in-progress, finished goods, loose tools and spares etc. It has to invest in accounts receivable and carry some cash balance to make payment for wages, salaries and other expenses throughout the year. Thus, 'hard core working capital' is the permanent working capital which is required to produce goods and services necessary to satisfy their demand at the lowest point. It is always gainfully employed in the business. The permanent working capital possesses the following important characteristics:

First, unlike fixed assets, it keeps on changing its form from one asset to another.

Second, it cannot be substantially reduced as long as firm is a going concern.

Third, with the growth of business, the size of this component of working capital also grows.

The quantum of 'hard core' working capital is determined by taking into consideration the sales/production volume, technology of production process and different operating policies of the firm. At different levels of sales, different levels of inventory, receivables and cash balance are required. A fast production process may process raw material at a faster rate and this may decrease the level of inventory on permanent basis. The firm's policies also have direct impact on the quantum of working capital. For example, if a firm changes its credit period from 30 days to 60 days the amount of working capital will go up permanently. Similarly, if as a policy measure the firm changes the level of its safety stock or cash balance, permanent working capital level will also be affected. The Tand on Committee has laid down

norms for the various components of working capital in major industries. These may be of great help in the determination of 'hard core' working capital.

The identification of permanent working capital is very significant from the point of its financing. The supplier of hard core working capital should not expect its return until the business ceases to exist. Therefore, the 'hard core' component of working capital should be financed from long term sources of funds. Forth is purpose, besides ploughing back of profits, shares and debentures can be issued to raise necessary funds. In fact, all long-term sources of funds are suitable for the purpose of financing of hard core working capital.

8.2.2 IMPORTANCE OF WORKING CAPITAL

Working Capital is just like the heart of business. If it becomes weak, the business can hardly prosper and survive. It is an index of the solvency of a concern. Its proper circulation provides to the business the right amount of cash to maintain regular flow of its operations. The following are a few advantages of adequate working capital funds in the business:

1. **Cash Discount -** If proper cash balance is maintained the business can avail of the cash discounts facilities offered to it by the suppliers.
2. **Liquidity and Solvency -** The proper administration of working capital enhances the liquidity in funds, solvency and credit - worthiness of the concern.
3. **Meeting Contingencies-** It provides funds for unforeseen emergencies so that a business can successfully sail through the periods of crisis.
4. **High Morale -** The provision of adequate working capital improves the morale of the executives and their efficiency leads it to higher climax.
5. **Good Bank Relations-** Good relations with banks can also be maintained. The enterprise by maintaining an adequate amount of working capital is able to maintain a sound bank credit, trade credit and can escape insolvency.
6. **Fixed Assets Productivity is increased -** Fixed assets of the firm cannot work without proper amount of working capital. Without it fixed assets are like guns which cannot shoot as there are no cartridges. Somebody has aptly commented that the fate of large scale investment in fixed assets is largely determined by the manner in which its current assets are managed.

7. **Research and Innovation Programmes -** No research programme, innovation and technical developments are possible to be undertaken without sufficient amount of working capital.
8. **Expansion Facilitated -** The expansion programme of a firm is highly successful, if it is financed through own working capital.
9. **Profitability Increased -** The profitability of a concern also depends, in no small measure, on the right proportion of fixed assets and current assets. Every activity of the business directly or indirectly affects the current position of the enterprise, hence, its need should be properly estimated and calculated.

Thus, the need for maintaining an adequate working capital can hardly be questioned. Just as circulation of blood is very necessary in the human body to maintain life, smooth flow of funds is very necessary to maintain the health of the enterprise. The importance of working capital can be very well explained in the words of Husband and Dockery, "The prime object of management is to make a profit. Whether or not this is accomplished in most businesses depends largely on the manner in which the working capital is administered".

8.2.3 FACTORS AFFECTING WORKING CAPITAL

There are numerous factors which affect the working capital requirements of a concern. Their appraisal assists the management in formulating its sound working capital policies and estimating its requirements. The important factors are as follows:

1. **Nature of Business -** The effect of the general nature of the business on working capital requirements cannot be exaggerated. Rail, roads and other public utility services have large fixed investment so they have the lower requirements for current assets. Industrial and manufacturing enterprises, on the other hand, generally require a large amount of working capital. A rapid turnover of capital (sales divided by total assets) will inevitably mean a larger proportion of current assets. However, the authors differ as regards to its impact on working capital requirements. As Husband and Dockery opine, "The working capital position is affected more by business conditions and trends than by the nature or the size of the company".
2. **Production Policies -** The nature of production policy also exercises its impact on capital needs. Strong seasonal movements have special working capital problems and requirements. A high level production plan also involves higher investment in working capital.

3. **Proportion of the Cost of Raw Materials to total costs -** In those industries where cost of materials is a large proportion of the total cost of the goods produced or where costly raw materials are used, requirements of working capital will be comparatively large. But if the proportion of raw materials is small, the requirements of working capital will naturally be small.
4. **Length of Period of Manufacture -** The time which elapses between the commencement and end of the manufacturing process has an important bearing upon the requirements of working capital. If it takes long to manufacture the finished product, naturally a large sum of money will have to kept invested in the form of working capital.
5. **Rapidity of Turnover -** Turnover represents the speed with which the working capital is recovered by the sale of goods. In certain businesses, sales are made quickly so that stocks are soon exhausted and new purchases have to be made. In this manner, a small sum of money invested in stocks will result in sales of a much large amount. It will reduce the requirements of working capital.
6. **Terms of Purchases -** If continuous credit is allowed by suppliers, payment can be postponed for some time and can be made out of the sale proceeds of the goods produced. In such a case, the requirements of working capital will be reduced. The period of credit received and allowed also determines the working capital requirements of the enterprise.
7. **Growth and Expansion of Business -** As a company grows, it is logical to expect that the larger amount of working capital will be required. Growing concerns require more working capital that those that are static. T h e requirement of working capital also varies with economic circumstances and corporate practices.
8. **Business Cycles -** Requirement of working capital also varies with the business cycles. When the price level is up due to boom conditions, the inflationary conditions create demand for more working capital. During depression also a heavy amount of working capital is needed due to the inventories being locked unsold and book debts uncollected.
9. **Requirement of Cash -** The working capital requirements of a company are also influenced by the amount of cash required by it for various purposes. The greater the requirement of cash, the higher will be working capital needs of the company.

10. **Dividend Policy of the Concern -** If a conservative dividend policy is followed by the management the needs of working capital can be met with the retained earnings. Often variations in need of working capital bring about an adjustment in dividend policy. The relationship between dividend policy and working capital is well established and mostly companies declare dividend after a careful study of their cash requirements.
11. **Other Factors -** In addition to the above considerations there are a number of other factors affecting the requirements of working capital, for example, lack of co-ordination in production and distribution policies, the fiscal and tariff policies of the government, etc.

8.3 FIXED CAPITAL VS. WORKING CAPITAL

The proportion of fixed and working capital required for an enterprise varies from industry to industry. There are no hard and fast rules as regards to fixing their respective sizes. If the working capital is high, the fixed capital will be low or vice-versa. The presence of high working capital can be ascertained from the large carry-over of raw materials, ratio of indirect costs to the total costs and lack of control over performance. For efficient conduct of an enterprise a proper balance has to be maintained between the fixed capital and current capital.

The proportion between fixed and working capital depends to a large extent upon the nature of business. In transportation and engineering the proportion of fixed capital is high while in public utilities, advertising agencies and manufacturing industries the proportion of working capital is high. Initially, a business requires more working capital, but later on as the cycle of production, selling, and collection starts, the requirements of working capital diminish comparatively. As the output goes up the need for investment in current assets enhances. However, the relationship between output, fixed assets and current assets is not linear, current assets increase at a decreasing rate with output.

The relationship between fixed and working capital may differ from country to country, from industry to industry in the same country, even from unit to unit in the same industry. High degree of mechanisation, shortage of man-power and technical advancement these all factors contribute to the high proportion of fixed capital. That is why, in less advanced countries the proportion of fixed capital may not be so high.

With regard to industries, the degree of mechanisation and automation as also the size of unit generally determines the proportion of fixed and working capital. The iron and steel, hydro-electric,

mining and heavy engineering industries are usually organised on a large scale, hence they require a greater proportion of fixed capital an account of higher degree of mechanisation and automation. On the other hand, in consumer goods industries like cotton textiles, the value of raw materials and labour is so substantial that the proportion of working capital is much greater than that of the fixed capital. Similarly, in a mail order business concern where the operations consist entirely of simple office accommodation, furniture and fixtures, warehousing and packing facilities, the fixed capital is very small in relation to the working capital. The capital intensive industries like cement, paper and chemicals, etc. have the fixed capital two or three times or even more of the working capital. The main reason of a higher proportion of fixed capital in such cases is the use of costly machine of huge size requiring spacious premises and costly building accommodation.

8.4 WORKING CAPITAL FORECASTING

The forecast of working capital requirements of a concern is not an easy task. As the concept of working capital is closely related to that of current assets, so a number of financial experts suggest that in estimating the working capital requirements, the total current assets requirements should be forecasted. But, however, this contention is not justified on logic as the short-term needs of the funds, are vitally affected by the nature and composition of fixed assets. Hence, the problem of working capital forecast should be dealt within the overall financial requirements and financing policies of the concern.

Forecasting Techniques of Working Capital

If the working capital is to be estimated for the ensuing year, then the current requirement of the assets and cash flow for that period are to be estimated. The study of cash flows will reveal how much cash is available to meet the current assets requirements. The basic object of forecasting working capital needs is either to measure the cash position of the enterprise or to exercise control over the liquidity position of the concern. But, the circular flow of working capital does not occur automatically and it is the essential responsibility of management to guide it in proper proportions through the production machine.

There are many popular methods available for forecasting the working capital requirements which are as follows:

(i) Cash Forecasting Method. In this method the position of cash at the end of the period is shown after considering the receipts and payments to be made during that period. Its form assumes more or less

a summary of cash book. This shows the deficiency or surplus of cash at the definite point of time.

(ii) The Balance Sheet Method. In the balance sheet method of forecasting, a forecast is made of the various assets and liabilities of the business. Afterwards, the difference between the two is taken which will indicate either cash surplus or cash deficiency.

(iii) Profit and Loss Adjustment Method. Under this method the forecasted profits are adjusted on cash basis. That means, cash from operations is taken, as not that profit figure as shown by profit & loss account, but the figure of profit as adjusted in the light of non-cash items such as depreciation, loss on sale of capital assets, preliminary expenses written off from profit & loss account etc. Since these items do not affect cash position, though they have been charged to the profit & loss account, they are added back or deducted from loss, as the case may be. Similarly, increase in current assets and decreased in current liabilities will mean decrease in cash resources and vice-versa.

(iv) Per Cent-of-Sales Method. Having determined the sales accurately, steps can be taken to forecast the working capital of concern, It is a traditional and simple method of determining the volume of working capital and its components, sales being a dominant factor. In this method, working capital is determined as a per cent of forecasted sales. It is decided on the basis of past observations. If over the year, relationship between sales and working capital is found to be stable then this relationship may be taken as a standard for the determination of working capital in future also. This relationship between sales and working capital and its various components may be expressed in three ways: (i) as number of days of sales; (ii) as turnover; and (iii) as percentage of sales.

The per cent of sales method of determining working capital is simple and easy to understand and is useful in forecasting the working capital requirements, particularly, in the short-term. However, the greatest drawback of this method is the assumption of linear relationship between sales and working capital. Therefore, this method cannot be recommended for universal application. It may be found suitable by individual companies in specific situations.

(v) The Operational Cycle Method. This method of working capital forecast is based on the operational cycle concept of working capital. The operational cycle refers to the period that a business enterprise takes in converting cash back into cash. As an example, a manufacturing firm uses cash to acquire inventory of materials that is converted into semi-finished goods and then into finished goods. When finished goods are disposed of to customers on credit, accounts receivable is generated. When cash

is collected from these customers (trade debtors), we again have cash. At this stage one operating cycle is completed. Thus, a circle from cash back to cash is called the 'Operating Cycle'. Each of the above operating cycle stage is expressed in terms of number of days of relevant activity and requires a level of investment to support it. The sum total of these stage-wise investments will be the total amount of working capital of the firm.

The following formulae may be used to express the framework of the operating cycle.

$t=(r-c)+w+f+b$

Where,

t stands for the total period of the operating cycle in number of days;

r stands for the number of days of raw material and stores consumption requirements held in raw materials and stores inventory;

c stands for the number of days of purchases in trade creditors;

w stands for the number of days of cost of production held in work-in- progress.

f stands for the number of days of cost of sales held in finished goods inventory; and

g stands for the number of days of sales in book debts.

The computations may be made as under:

$$r = \frac{\text{Average inventory of raw materials and store}}{\text{Average per day consumption of raw materials and stores}}$$

$$c = \frac{\text{Average trade creditors}}{\text{Average credit purchases per day}}$$

$$w = \frac{\text{Average work-in progress}}{\text{Average cost of production per day}}$$

$$f = \frac{\text{Average inventory of finished goods}}{\text{Average cost of sales per day}}$$

$$b = \frac{\text{Average book debts}}{\text{Average sales per day}}$$

The average inventory, trade creditors, work-in-progress, finished goods and book debts can be computed by adding the opening and closing balances at the end of the year in the respective accounts and dividing the same by two.

The average per day figures can be obtained by dividing the concerned annual figures by 365 or the number of days in the given period.

The operational cycle method of determining working capital requirements gives only an average figure. The fluctuations in the intervening period due to seasonal or other factors and their impact on the working capital requirements cannot be judged in this method. To identify these impacts, continuous short run detailed forecasting and budgeting exercises are necessary.

(vi) Regression Analysis Method. The regression technique is a very useful statistical technique of working capital forecasting. In the sphere of working capital management, it helps in making projection after establishing the average relationship in the past years between sales and working capital (current assets) and its various components. The analysis can be carried out through the graphic portrayals (scatter diagrams) or through mathematical formula.

The relationship between sales and working capital of various components may be simple and direct indicating complete linearity between the two or may be complex in differing degrees involving simpler linear regressions; or simple curvilinear regression, and multiple regressions situations.

This method with the range of technique suitable for simple as well as complex situations, is an undisputed refinement on traditional approaches of forecasting and determining working capital requirements. It is particularly suitable for long-term forecasting.

Illustration 1. From the following information, prepare a statement showing the average amount of working capital required by Sony Ltd., taking 360 days in a year.

Annual sales are estimated at 5,000,000 units at ₹ 2 per unit. Production quantities coincide with sales and will be carried on evenly throughout the year and the production cost is:

Materials ₹ 1 per unit.
Labour ₹ 0.40 per unit
Overheads ₹ 0.35 per unit

Customers are given 45 days credit and 60 days credit is taken from suppliers, 36 days' supply of raw materials and 15 days' supply of finished goods are kept.

Production cycle is 18 days and all material is issued at the commencement of each production cycle. And cash balance equivalent to one-third of the average of other working capital requirement is kept for contingencies.

Solution

Statement of working capital requirements forecast

	Current Account		₹
1.	Stock of Raw Materials	36 x 5,00,000 / 360	50,000.00
2 .	Stock of Finished Goods	15 x 8,75,000 / 360	36,458.33
3.	Work-in Progress	18x8,75,000 / 360	43,750.00
4.	Debtors	45 x 8,75,000 / 360	1,09,375.00
	Total current Assets excluding cash		2,39,583.33
	Less Current Liabilities:		
	Creditors of Raw Materials	60 x 5,00,000 / 360	83,333.33
	Other Working capital requirement		1,56,250.00
	Add cash for contingencies (1/3)		52,083.33
	Working Capital Required		2,08,333.33

8.5 CHECK YOUR PROGRESS

1. Gross working capital approach refers to:

A. current asset –current liability

B. total current assets

C. total current liability

D. none of the above

2. Net working capital approach refers to:

A. total current liability

B. current asset –current liability

C. Total current asset

D. current liability –current asset

3. The period that a business enterprise takes in converting cash back into cash refers to:

A. conversion cycle

B. operational cycle

C. cash cycle

D. periodic cycle

4. Hard core working capital also called:

A. permanent working capital

B. temporary working capital

C. both of the above

D. None of the above

5. The excess of working capital over permanent working capital is

A. temporary working capital

B. variable working capital

C. both of the above

D. none of the above

8.6 SUMMARY

Working capital refers to the funds invested in current assets i.e., investment in sundry debtors, cash and other current assets. The total of investments in all current assets is known as gross working capital. Net working capital refers to the excess of total current assets over total current liabilities. The important factors affecting working capital are general nature of business, production policy, credit policy, inventory policy, abnormal factors and market conditions. Permanent working capital also called hard core working capital. Requirement of working capital over and above the permanent working capital refers temporary working capital. Temporary working capital also called variable working capital. Working capital forecasting methods are:

Cash Forecasting Method The Balance Sheet Method

Profit and Loss Adjustment Method P**er Cent-of-Sales Method**

8.7 KEYWORDS

Working Capital: It refers to short-term funds to meet operating expenses.

Gross Working Capital: The total current assets are termed as the gross working capital.

Net Working Capital: The excess of current assets over current liabilities represents net working capital.

Permanent Working Capital: It is the minimum investment kept in the form of inventory of raw materials, work in progress, finished goods, stores and spares, and book debts to facilitate uninterrupted operation in a firm.

Temporary Working Capital: Any additional working capital apart from permanent working capital required to support the changing production and sales activities is referred to as temporary working capital.

8.8 SELF ASSESSMENT TEST

Q.1 What are the different techniques of forecasting the working capital of a concern? Explain and illustrate.

Q.2 Differentiate between permanent working capital and temporary working capital.

Q.3 Explain the factors that you would take into consideration for assessing the amount of working capital for different kinds of business enterprises of various sizes.

Q.4 What is meant by working capital? How would you determine the working capital requirements?

Q.5 BPL Ltd. is desirous to purchase a business and has consulted you and one point on which you are asked to advise them is the average amount of working capital which will be required in the first year's working.

You are given the following estimates and are instructed to add 10% to your computed figure to allow for contingencies.

		Figures for the year (₹)
(i)	Average amount locked up for stocks:	
	Stock of finished product	5,000
	Stock of stores, materials etc.	8,000
(ii)	Average credit given:	
	Inland Sales-6 weeks credit	3,12,000

	Export Sales 1½ weeks credit	78,000
(iii)	Lag in payment of wages and other outgoings:	
	Wages 1½ weeks	2,60,000
	Stores, materials etc. - 6 months	48,000
	Rent, Royalties etc. - 6 months	10,000
	Clerical staff - ½ month	62,400
	Manager - ½ month	4,800
	Miscellaneous expenses - 1½ months	48,000
(iv)	Payments in advance:	
	Sundry expenses (paid quarterly in advanced)	8,000
(v)	Undrawn profits on the average throughout the year	11,000

Set up your calculations for the average amount of working capital required.

8.9 ANSWERS TO CHECK YOUR PROGRESS

1. B
2. B
3. B
4. A
5. A

8.10 REFERENCES/SUGGESTED READINGS

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Subject: Financial Management	
Course Code: BC 502	**SLM Conversion By:** Ms. Chand Kiran
Lesson No.: 9	

MANAGEMENT OF CASH

STRUCTURE

9.0 Learning Objectives

9.1 Introduction

9.1.1 Meaning of Cash and Cash Management

9.2 Motives for Holding Cash

9.3 Objectives of Cash Management

9.4 Strategies to Deal with Various Factors of Cash Management

9.5 Check Your Progress

9.6 Summary

9.7 Keywords

9.8 Self-Assessment Test

9.9 Answers to Check Your Progress

9.10 References/Suggested Readings

9.0 LEARNING OBJECTIVES

After reading this lesson, you will be conversant with:

- Motives for holding cash
- Methodology of cash planning
- Various methods of accelerating cash inflows and slowing cash outflows
- Determination of optimum cash flows
- Need for investing surplus cash in marketable securities.

9.1 INTRODUCTION

Cash is a vital component of working capital because it is the cash which keeps a business going.

It is the hub around which all other financial matters centre. There is no denying the fact that cash is the very life-blood of a business enterprise. The steady and healthy circulation of cash throughout the entire business operation is the basis of business solvency. Cash is the basic input needed to keep the business running on a continuous basis. At the same time, it is also the ultimate output expected to be realised by selling the services or products manufactured by the firm. Ultimately, every transaction in a business results in either an inflow or outflow of cash. Therefore, effective management of cash is the key determinant of efficient working capital management. There should be sufficient cash with a firm all the time to meet the needs of the business. Both excess and inadequate cash situations are undesirable from the point of view of profitability and liquidity. Inadequate cash may degenerate a firm into a state of technical insolvency and even lead to its liquidation. It will eventually disturb the firm's manufacturing operation. On the other hand, excessive cash remains idle, without contributing anything towards the firm's profitability. Moreover, holding of cash balance has an implicit cost in the form of its opportunity cost. The larger the idle cash, the greater will be its opportunity cost in the form of loss of interest which could have been earned either -by investing it in some interest-bearing securities or by reducing the burden of interest charges by paying off the loans taken previously. If the cash balance with a firm at any time is surplus or deficit, it is obvious that the finances are mismanaged. Today, when cash, like any other asset of the company, is a tool for profits, the emphasis is on right amount of cash at the right time, at the right place and at the right cost.

9.1.1 MEANING OF CASH AND CASH MANAGEMENT

Cash itself does not produce goods or services. It is used as a medium to acquire other assets. It is the other assets which are used in manufacturing goods or providing services. The idle cash can be deposited in bank to earn interest. The term cash with reference to cash management is used in two senses. In a narrow sense, it includes coins, currency and cheques in hand and balances in bank account. And in a broader sense, it also includes "near-cash assets" such as marketable securities and time deposits with banks which can be immediately sold or converted into cash.

Cash management is concerned with the management of collection and disbursement of cash, determination of optimum amount of cash and investment of surplus cash. Cash management is concerned with optimizing amount of cash available to the company and maximizing interest on spare funds not

required immediately by the company. Various techniques are used for the management of cash which are explained later in the lesson.

9.2 MOTIVES FOR HOLDING CASH

A distinguishing feature of cash as an asset, irrespective of the form in which it is held, is that it does not earn any substantial return for the business, in spite of this fact; cash is held by the enterprises with the following motives.

1. Transactions motive

One of the important motives for maintaining cash is to facilitate business transactions. Business needs cash for making various payments in ordinary course of its operation. It includes payment for purchase of material, and payment of wages, salary, interest, dividend, taxes and other expenses. Similarly, business gets cash from its selling activities and other investments. Thus, the receipts and payments constitute a continuous two-way flow of cash. Since the inflows and outflows of cash do not perfectly synchronize, an adequate or a minimum cash balance is required to uphold the operations if outflows exceed the inflows. Therefore, in order to meet the day-to-day transactions, the requirement of cash is known as transaction motive. So, it refers to the holding of cash to meet anticipated obligations when timing is not perfectly synchronised with the inflows of cash. Although, a major part of transactions balances is held in. cash, a part may also be held in the form of marketable securities whose maturity conforms to the timing of the anticipated payments, such as payment of taxes, dividends, etc.

2. Precautionary Motive

This motive for holding cash has to do with maintaining a cushion or buffer to meet unexpected contingencies. The unexpected cash needs at short notice may be the result of:

(i) Uncontrollable circumstances, such as floods, Strikes, droughts, etc.;

(ii) bills which may be presented for settlement earlier than expected

(iii) Unexpected delay in collection of trade dues;

(iv) Rejection of orders by customers due to their dissatisfaction; and

(v) Increase in the cost of material, labour, etc.

Precautionary balances are the cash balances which are held as reserve for random and unforeseen fluctuations in cash flows, i.e., this motive implies the need to hold cash to meet unpredictable obligations. The more predictable the cash flows, the less precautionary balances that are needed and vice-versa.

Moreover, the need for this types of cash balance may be reduced if there is a ready borrowing power in order to meet the emergency cash outflows. Sometimes, a portion of such cash balances may be held in marketable securities.

3. Speculative Motive

The speculative motive refers to the desire of a firm to take advantage of favourable business opportunities which are typically outside the normal course of operations. The speculative motive helps to take advantages of:

(i) an opportunity to purchase raw materials at a reduced price against immediate payment- i.e. benefit of cash discounts-

(ii) a change to speculate of interest rate movements by purchasing securities when rates of interest are expected to decline;

(iii) the purchase at favourable prices.

4. Compensating Motive

An enterprise has to compensate banks and other institutions for providing certain services and loans. Such services include clearance of cheques, supply of credit information, transfer of funds, etc. For some services, the banks charge commission or fee. But for other services they seek indirect compensation. We know that banks require their clients to maintain a minimum balance of cash in their accounts in the bank. While the customers cannot withdraw below this minimum balance. The banks of their own can utilise this balance to earn a return. In this way, the banks are compensated for the services rendered by them to the firms. Such minimum required balances are called compensating balances.

The four motives of holding cash discussed above are not of equal importance. Transaction motive and compensating motive are the most important ones. This is so because the enterprises normally do not speculate and so they need not have speculative balances. As regards the requirements of precautionary balances, the firms can use short term financing pattern for the same.

9.3 OBJECTIVES OF CASH MANAGEMENT

The main objective of cash management is to bring equilibrium between liquidity and profitability of business to maximise its long term profits. The greater the amount of cash balance more will be the liquidity of the firm and lesser will be its profitability. On the other hand, lesser the amount of cash balance, more will be the profitability and lesser will be the liquidity of business. This is true to a certain

limit. After this limit, lesser liquidity will reduce the profitability. The following are two main objectives of cash management:

1. To meet the cash disbursement needs as per the payment schedule.
2. To minimise the amount locked up as cash balances.

As a matter of fact, both the objectives are mutually contradictory and therefore, it is a challenging task for the finance manager to reconcile them and have the best in this process.

1. Meeting cash disbursement needs

The first basic objective of cash management is to meet the payments schedule. In other words, the firm should have sufficient cash to meet the various requirements of the firm at different periods of time. The business has to make payment for purchase of raw materials, wages, taxes, purchase of plant, etc. The business activity may come to a grinding halt if the payment schedule is not maintained. Cash has, therefore, been aptly described as the "oil to lubricate the ever-turning wheels of the business, without it the process grinds to a stop".

2. Minimising funds locked up as cash balances

The second basic objective of cash management is to minimise the amount locked up as cash balances. In the process of minimising the cash balances, the finance manager is confronted with two conflicting aspects. A higher cash balance ensures proper payment with all its advantages. But this will result in a large balance of cash remaining idle. Low level of cash balance may result in failure of the firm to meet the payment schedule. The finance manager should, therefore, try to have an optimum amount of cash of balance keeping the above facts in view.

9.4 STRATEGIES TO DEAL WITH VARIOUS FACETS OF CASH MANAGEMENT

In order to solve the uncertainty about cash flow prediction and lack of synchronisation between cash receipts and payments, the firm should develop appropriate strategies for cash management. The firm should evolve strategies regarding the following four facets of cash management:

1. Cash planning
2. Managing the cash flows
3. Optimum cash level
4. Investing surplus cash

1. Cash Planning

Cash planning is a technique to plan and control the use of cash. It is a process predicting cash inflows and outflows of the firm over the forthcoming period so as to determine surplus or shortage of cash. In case of excess cash inflows, the firm can invest it most profitably and in case of dearth of cash, the firm can make adequate provision for the same. Thus, with the help of cash planning, the firm can anticipate discrepancies between inflows and outflows of cash and thereby reduce the possibility of idle cash balances (that adversely affect the return) and cash deficits (that can cause illiquidity crisis).

Cash planning is done on the basis of the present operations and the likely changes therein over a stipulated plan period. The basic tool which a finance manager employs to forecast the predictable discrepancies between cash inflows and outflows is the cash budget. The cash budget reveals the timing and magnitude of net cash outflows as well as the periods during which surplus cash may be available for temporary investment.

Cash forecasts are needed to prepare cash budgets. Cash forecasting may be done on short-term and long-term basis. Short-term cash forecasting is made for a period of less than one year to determine operating cash requirements of the firm. This will help the firm to ascertain how much cash balance will be held in balance, to what extent the firm will have to rely on bank financing and amount of surplus cash that would be available for investment in marketable securities. Thus, short- term cash forecasting enables the firm to adjust discrepancies between cash outflows and inflows favourably. With prior knowledge of timing of cash requirements, the finance manager will experience no problem in negotiating with banks for short- term funds. A carefully and skilfully developed cash forecast helps the finance manager choose such securities for investment of idle cash as may satisfactorily trade-off risks and return. The important uses of carefully developed short term cash forecasts are:

a) They help to determine operating cash requirements.

b) They help to anticipate short-term financing.

c) They help in guiding credit policies.

There are two methods of forecasting short-term cash requirements, viz., the receipt and disbursement method and the adjusted net income method. In receipt and disbursement method forecast for each time of cash receipts and cash payments has to be made. All cash receipts of income and non-income nature are considered. Thus, cash inflows from sales, liquidation of assets, dividend and interest

form part of cash receipts Likewise, cash disbursements, such as payment on account of purchase of materials, wages and salaries to employees, payments of taxes to the Government and other payments of revenue and non-revenue nature have to be prognosticated. After anticipating cash receipts and disbursements periodically, the firm can integrate them in tabular from (known as cash budget) to find out net cash inflow or outflow for each month.

Illustration I: Rama Industries wishes to arrange overdraft facilities with its Bankers during the period April to June, 1999 when it will manufacturing mostly for stock. Prepare a cash budget for the above period from the following data, indicating the extent of the bank facilities the company will require at the end of each month

(a)

2018	**Sales (₹)**	**Purchases (₹)**	**Wages (₹)**
February	1,80,000	1,24,800	12,000
March	1,92,000	1,44,000	14,000
April	1,08,000	2,43,000	11,000
May	1,74,000	2,46,000	10,000
June	1,26,000	1,26,000	15,000

(b) 50 per cent of credit sales are realised in the month following the sales and remaining 50 per cent in the second month following. Creditors are paid in the month following the month of purchase.

(c) Cash at Bank on 1.4.2018 (estimated) ₹ 25,000

Solution:

Cash Budget for Three Months from April to June, 2018

(a)	**Receipts**	**April**	**May**	**June**
		₹	**₹**	**₹**
	Opening Balance	25,000	53,000	-51,000
	Sales (last to last month)	90,000	96,000	54,000
	Sales (last month)	96,000	54,000	87,000

	Total Receipts	2,11,000		2,03,000	90,000
(b)	**Payments:**				
	Purchases	1,44,000		2,43,000	2,46,000
	Wages	14,000		11,000	10,000
	Total Payments	1,58,000		2,54,000	2,56,000
	Closing Balance (a-b)	53,000	(-)	51,000	(-) 1,66,000

Note: Workers are paid on 1st of the following month.

In the adjusted net income method only those receipts and payments are predicted which are of revenue in nature. Thus, receipts from sale of shares and debentures and fixed assets would not form part of the forecast under this method. In the same way, disbursements in respect of purchase of fixed assets or dividend distribution would not be considered. Further, adjusted net income method considers all receipts and payments on accrual basis. Finally, all appropriations, such as depreciation and amortization of patents have to be forecast under this method. Forecast prepared on adjusted net income method helps in anticipating the working capital requirements. The preparation of cash budget, according to this method, can be understood with the help of following illustration

Illustration 2: From the following information prepare a cash budget under the adjusted profit and loss method

Balance Sheet as on 1st January, 2018

	₹		₹
Share Capital	1,25,000	Land and Building	75,000
Capital Reserve	12,500	Plant and Machinery	50,000
Profit and Loss A/c	22,500	Furniture and	
Debentures	25,000	Fixtures	12,500
Creditors	72,000	Closing Stock	10,000
Accrued expenses	500	Debtors	65,000
		Bank	45,000
	2,57,500		**2,57,500**

Projected Trading and Profit and Loss Account

for the year ending 31st December, 2018

Particulars		**₹**	**Particulars**	**₹**
To Opening stock		10,000	By sales	2,00,000
To Purchases		1,50,000	By Closing Stock	25,000
To Gross Profit c/d		65,000		
		2,25,000		2,25,000
To Salary and wages	6,250		By Gross Profit b/d	65,000
Add outstanding	1250	7,500	By Interest received	250
To Depreciation:				
Plant & Machinery		5,000		
Furniture & Fixture		2,500		
To Administration Expenses		8,750		
To Selling Expenses		6,250		
To Net Profit c/d		35,250		
To Dividend paid		65,250		
To Balance c/d		25,000		
		32,750		65,250
			By Balance B/d	
				22,500
			By Net Profit b/d	
				35,250
		57,750		**57,750**

The following is the additional information for the year 1998 Shares were issued for ₹ 25,000 and debentures were issued for ₹ 5,000. On 31st December, 1998, the accrued expenses were ₹1,250, Debtors ₹ 50,000, Creditors ₹ 75,000 and Land & Building ₹ 1,00,000.

Solution

Cash Budget-Adjusted Profit and Loss Method

	₹	₹	₹
Cash balance on 1. 1. 2018			45,000
Additions to Cash:			
Net profit for the year		35,250	
Depreciation:			
Plant & Machinery	5,000		
Furniture & Fixture	2,500	7,500	
Accrued expenses (Difference)		750	
Decrease in Debtors		15,000	
Increase in Creditors		3,000	
Issue of Share Capital		25,000	
Issue of Debentures	5,000	48,750	91,500
Total Cash Available			1,36,500
Deductions from Cash			
Dividend paid		25,000	
li-icrease in Stock		15,000	
Purchase of Land & Building		25,000	65,000
Cash Balance as on 31.12.2018			71,500

In addition to short-term cash forecasting, a finance manager has to predict long-term cash requirements for the firm. Long-term cash forecast serves as an objective tool to evaluate the impact of new product market strategy on the firm's financial position in the long run. Besides, it also helps in prognosticating working capital needs for the firm. Long-term cash forecasts are also useful in streamlining corporate planning. Such forecasts force each division to plan for future and to formulate project carefully Long-term forecasts can be made either by the receipts and disbursements method or by the adjusted net income method.

2. Managing the Cash Flows

The cash budget is a forerunner for controlling the cash flows effectively. The crux of effective

cash management lies in synchronizing the cash inflows with cash outflows. This is done by preparing periodical cash reports. The cash budget is the planning of forecasting instrument whereas cash report makes a comparison of actual cash flows with estimated cash flows. If variations are found, complete analysis for the deviations is made. On the basis of such analysis, corrective steps are taken and whenever necessary, future cash budgets are revised. If it is found that deviations are due to an ineffective or a wrong policy, action is taken to correct it. A firm having minimum variations in cash flows is considered to have managed its cash more efficiently. For effective control of cash flows, preparation of daily cash reports is advised by financial experts.

Besides, cash management efficiency will have to be improved through a proper control of cash collection and disbursement. The inflow of cash should be accelerated while, as for as possible, the outflow of cash should be de-accelerated.

Methods of Accelerating cash inflows

Following are the various methods of accelerating cash inflows:

(a) Prompt payment by customers

In order to accelerate cash inflows, the collections from customers should be prompt. This will be possible by prompting billing. The customers should be promptly informed about the amount payable and the time by which it should be paid. It will be better if self-addressed envelope is sent alongwith the bill and quick reply is requested. Another method for prompting customers to pay earlier is to allow them a cash discount. The availability of discount is a good saving for the customer and in an anxiety to earn it then, make quick payments.

(b) Quick deposit of customer cheques

One way of shortening the time lag between the date when a customer sings a cheque and the date when the funds are available for use is to make an arrangement for quick deposit of the cheques in the banks the moment they are received. Special attention should be given to large remittances. For example, these may be deposited individually or air mail services should be used for such remittances.

(c) Concentration Banking

To speed up collections, collections should be decentralised as far as possible. If, instead of one collection centre, there are a number of collection centres for the purpose, collections would certainly be speeded up. This procedure is named as concentration banking. Through this procedure, the mailing time of the

customers is reduced. Customers of a particular region may be directed to deposit/remit he repayments to a collection centre established at the central place of that region. The collection centre will deposit the payments received in the local bank account. Surplus (over the minimum balance to be kept) is transferred to a concentration bank regularly (may be daily), which is generally at the firm's head office. This concentration bank or central bank can get the payments by telegraphic transfer or telex, as per the instructions given by the firm. The collection centres may themselves collect the cheques or the cash payment from the customers, instead of customers remitting the payments to the collection centre. It further accelerates the process of collection because of the reduction in the mailing time. The advantage of decentralised collection is two-fold:

i. The mailing time is reduced, because the bills are prepared by the local collection centres and sent by them to the customers. Further, if the collection centres collect the payments by themselves, the time requires for mailing is reduced on this account also.
ii. Collection time is reduced, since the payments collected are deposited in the local bank accounts. The funds become usable by the firm immediately on hearing from the collection centre about the amount being deposited in the local bank account.

(d) Lock Box System

Under the concentration banking, the cheques or drafts received by the collection centres are deposited in the local banks. Therefore, sometime is wasted before the cheques or drafts are sent for collection. Under the lock box system, this time gap can be reduced. Under this system, firm takes on rent a lock box from the post office at important collection centres. Customers are instructed to send their cheques/drafts in the lock box. Firm authorises the local banks to withdraw these cheques/drafts from the lock box and credit the same to the firm account. Bank operates this lock box several times a day. Local banks are also instructed to transfer funds exceeding a particular level to the head office. This system is considered better to concentration banking because in this system, time involved in receiving cheques in the collection centres, their accounting in the books and the deposit of these cheques or drafts in the bank is saved. All these clerical tasks are performed by banks at lower costs. The collection of cheques starts immediately after their receipt.

(e) Collections through messengers

Certain firms like to send messengers at the places of customers to collect the payments. It certainly reduces the mailing time but increases the costs of collection in terms of the travelling costs of messengers. To conclude, whatever system of speeding up collections is adopted, the costs are to be compared with the benefits derived therefrom. In case the benefits of a particular system exceed the costs on a comparative basis, the same may be recommended by the finance manager for adoption by the firm.

Methods of Slowing Cash Outflows

In order to optimise cash availability in the firm, the finance manager must employ devices that could slow down the speed of payments outward in addition to accelerating collection. The following methods can be used to delay disbursements

Paying on Last Date

The disbursements can be delayed on making payments on the last due date only. If the credit is for 10 days then payment should be made on 10th day only. It can help in using the money for short periods and the firm can make use of cash discount also.

(b) Centralised Disbursements

The payments should be centralised and made through cheques or drafts. When the cheques are issued from the head office then it will take time for the cheques to be cleared through post. Moreover, firms will have to maintain lesser cash balances as against decentralised disbursement where each branch will have to maintain some cash. In this method, greater time will be involved in the presentation and collection of cheques. Control over payments will also become easier.

(c) Using Float

Float is the difference between the company's cheque book balance and the balance shown in the bank's books of account. When a firm writes a cheque, it will reduce the balance in its books of account by the amount of the cheque. But the bank will debit the account of its customers when the cheque is collected usually after a week. Thus, there is no strange if the firm's books show a negative balance while the bank's books show positive balance. The firm can make use of the float if the magnitude of the float can be accurately estimated.

In all these methods of delaying payments, the company's credit reputation is likely to be damaged. The cost that would, thus, result must be taken into account.

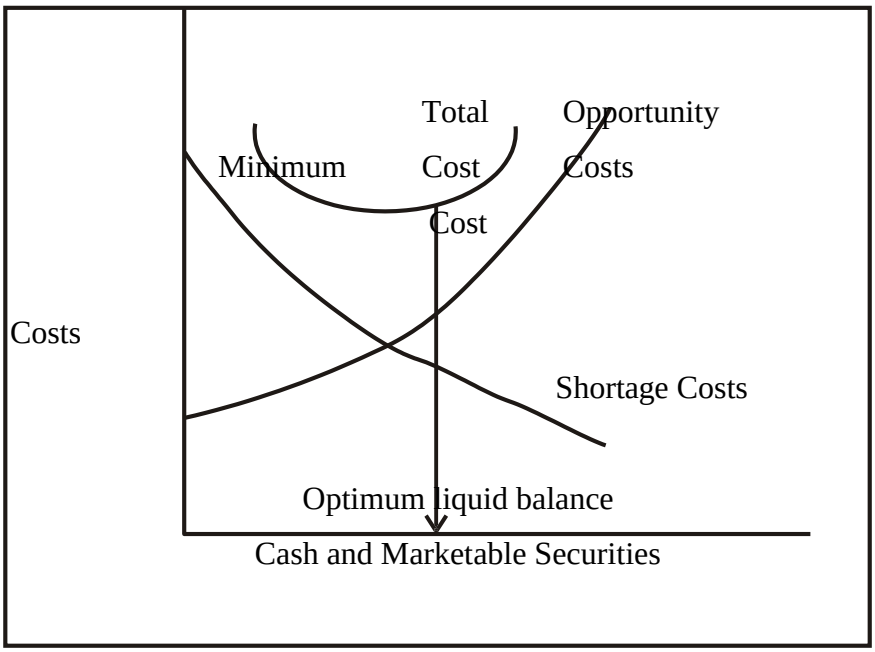
(d) Inter-bank transfer

Another method of making efficient use of cash resources is to transfer funds quickly from one bank to another bank where disbursement is to be made. This would prevent building up of excess cash balances in one bank. This procedure could be adopted by a company having accounts with several banks.

3. Optimum Cash Level

One of the primary responsibilities of the financial manager is to maintain a sound liquidity position of the firm so that obligations may be settled well in time. The test of liquidity is really the availability of cash to meet the firm's obligations as and when they become due. For this purpose, liquid balance (balance of cash and marketable securities) must be maintained at the optimum level. It is the level which gives the minimum cost of holding the cash balance. Determination of such a level is very important for an efficient cash management. If the liquid balance exceeds the required balance, it remains idle and, therefore, it involves opportunity cost in the sense that the amount could have been put to more effective use. None-the-less, liquidity position of the enterprise becomes more sound. On the other hand, if liquid balance is short of the requirements, the firm may have to incur shortage costs. The firm may be required to sell its fixed investments or it may have to resort to fresh borrowings. It may have to forego cash discounts and pay higher rates of interest on borrowings. There is a danger of losing goodwill and a risk of insolvency even. Thus with increasing liquid balances, opportunity or holding costs increase, but the 'shortage' costs godown, and vice-versa. The combination of opportunity costs and shortage costs gives the total cost of maintaining liquid balances at various levels. The point which gives the minimum total cost is the point of optimum liquidity balance - representing a trade-off of shortage cost against opportunity cost.

Optimum Liquid Balance



Cash Management Model

A number of cash management models have been developed to decide the optimal level of cash balance. These models are based on such major Considerations as the demand for cash, the interest rate on marketable securities and the cost of transfers between marketable securities and cash. There are two important models which lead to the determination of the optimum balance of cash.

(a)Inventory Model

The economic order quantity (EOQ) formula, basically used in inventory decision, has now come to be popularly employed to determine the optimal level of cash holding for the firm. William Baumol was the first man who applied the inventory model to the problem of cash management.

According to the EOQ model, optimum level of cash should be determined by balancing the carrying cost of holding cash (the interest foregone on marketable securities) against the fixed cost of transferring marketable securities to cash or vice-versa so as to minimize total costs. The level of cash at which the sum of carrying costs and the fixed costs associated with transferring marketable securities is

minimum, will be the optimum cash balance of the firm. The following formula is used to determine this optimum level.

$$Q = \frac{\sqrt{2CB}}{K}$$

Where,

Q stands for optimum size of cash inventory.

C stands for average fixed cost of securing cash from market.

B stands for- the total amount of transaction demand for cash over the period of time involved.

K stands for the cost of carrying the inventory of cash, i.e., interest rate on marketable securities for the period.

Illustration 3: Ramesh Company Limited estimated cash payments of ₹ 4 lakhs for a one month period. The average fixed cost for securing capital from the market is ₹ 1000 and the interest rate on marketable securities is 12 per cent per annum or 1.0 per cent for the one month period. Calculate EOQ.

Solution

Economic order size of cash in this instance will be:

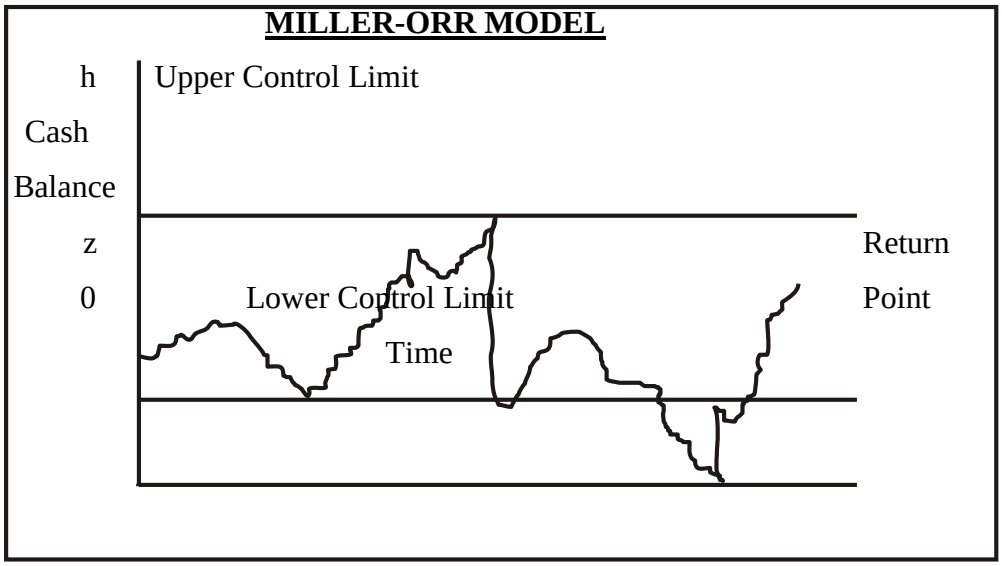
$$\frac{\sqrt{(2 \text{ ₹ } 1{,}000)\ (\text{₹ } 4{,}00{,}000)}}{0.01}$$

$$= \text{₹ } 2{,}82{,}843$$

The optimal transaction size of the company is ₹ 2,82,843 and the average cash balance is ₹ 1,41,421 (₹ 2,82,843/2).

b) Stochastic Model

This model is based on the basic assumption that cash balances change randomly over a period of time both in size and direction and form a normal distribution as the number of periods observed increase. The model prescribes two control limits-upper limit and lower limit. When cash balances reach the upper limit, a transfer of cash to investment account should be made and when cash balances reach the lower point, a portion of securities constituting investment account of the firm should be liquidated to return the cash balances to its return point.



The upper and lower limits of control are set after taking into account fixed cost associated with converting securities into cash and the vice-versa, and the cost of carrying stock of cash.

Miller - Orr model is one of the most important Stochastic Models. It is designed to determine the time and size of transfers between an investment account and cash account. In this model, control limits are set for cash balances. It specifies two control limits - 'h' the upper control limit and 'o' the lower control limit. The limits have been explained through a graph shown below.

When cash balance reaches the upper control limit, 'h-z'rupees of cash are converted into marketable securities so that the new cash balance is at z' level. When cash balance is reduced to the level 'zero', 'O-Z'., i.e. 'z' rupees of marketable securities are sold, so that the new cash balance is again at 'z' level. If the cash balance remains fluctuating between the two control limits, no transaction takes place (no conversion from cash to marketable securities or vice versa is required). The lower control limit may be set at a level higher than 'zero' point. The optimum value of 'h' is -3z. Average cash balance is (z+h)/3 approximately. The optimum value of 'z', the return point for security transactions can be calculated by applying the formula:

$$3\sqrt{3b\sigma^2/4j}$$

Where,

z = Return Point

b = Fixed cost associated with a security transaction

σ^2 = Variance of daily net cash flows

i = Interest rate per day on marketable securities

The high and low limits of cash balance are set up on the basis of fixed cost associated with the securities transactions, the opportunity cost of holding cash and the degree of likely fluctuations in cash balances. These limits satisfy the demands for cash at the lowest possible total cost. More variability of cash flows and higher fixed costs of a security transaction lead to higher control limits and vice versa.

The total costs of holding cash, i.e., fixed costs and opportunity costs are minimised within these control limits in case of uncertainty.

4. Investing Surplus Cash

Investing surplus cash involves two basic problems

(a) Determining the amount of surplus cash

(b) Determining the channels of investment

(a) Determining of surplus cash

Surplus cash is the cash in excess of the firm's normal cash requirements. While determining the amount of surplus cash, the finance manager has to take into account the minimum cash balance that the firm must keep to avoid risk or cost of running out of funds. Such minimum level may be termed as 'safety level for cash'.

Determining safety level for cash: The finance manager determines the safety level of cash separately both for normal periods and peak periods. In both the cases, he has to decide about the following two basic factors

(i) Desired days of cash. It means the number of days for which cash balance should be sufficient to cover payments.

(ii) Average daily cash outflows. This means the average amount of disbursements which will have to be made daily.

The "desired days of cash" and "average daily cash outflows" are separately determined for normal and peak periods. Having determined them, safety level of cash can be calculated as follows:

During normal periods

Safety level of cash = Desired days of cash x Average daily cash outflows

For example, if the finance manager feels that a safety level should provide sufficient cash to cover cash payments for seven days and the firm's average daily cash outflows are ₹ 6,000, the safety level of cash will be ₹ 42,000 (i.e. 7 x 6,000).

During peak periods

Safety level of cash = Desired days of cash at the busiest period x
Average of highest daily cash outflows.

For example, during the three busiest days in the month of December, the firm's cash outflows were ₹ 7,000 ₹ 8,000, and ₹ 9,000. The average cash outflows comes to ₹8,000. If the finance manager desires sufficient cash to cover cash payments for 5 days during the peak periods, the safety level would be ₹ 40,000 (i.e. ₹ 8,000 x 5).

The above ratios are helpful in monitoring level of cash balances. The actual cash balance is compared with the daily cash outflows to determine the number of days for which cash is available. Such number of days is then compared with the desired days of cash to ascertain whether the firm is below or above the safety level.

Illustration 4: From the following data ascertain whether the firms has surplus or deficiency of cash.

	Normal periods	**Peak periods**
Desired days of cash	6	4
Average daily outflows	30,000	50,000
Actual cash balance	1,00,000	1,20,000

Solution

During normal periods: The firm has a cash balance ₹1,00,000. The average daily cash outflows are ₹ 30,000. It means the firm has cash available only for 3.3 days as compared to require for 6 days. Hence, the firm has deficiency of cash.

During peak periods: The firm has a cash balance of ₹1,20,000. The average daily outflows are estimated at ₹ 50,000. It means the firm cash has available only for 2.4 days as compared to that required for 4 days. Hence, the firm has deficiency of cash.

(b) Determination of channels of investment

The finance manager can determine the amount of surplus cash, by comparing the actual amount of cash available with the safety or minimum level of cash, as explained in preceding pages. Such surplus cash may be either of a temporary or a permanent nature. Temporary cash surplus consists of funds which are available for investment on a short-term basis (maximum 6 months), since they are required to meet regular obligations, such as those of taxes, dividends, etc. Permanent cash surplus consists of funds which are kept by the firm to avail of some unforeseen profitable opportunity of expansion or acquisition of some asset. Such funds are, therefore available for investment for a period ranging from six months to a year.

Criteria for investment: In most of the companies there are usually no formal written instructions for investing the surplus cash. It is left to the discretion and judgement of the finance manager. While exercising such discretion of judgement, he usually takes into consideration the following factors:

(i) **Security:** This can be ensured by investing money in securities whose price remain more or less stable.

(ii) **Liquidity:** This can be ensured by investing money in short-term securities including short-term fixed deposits with bank.

(iii) **Yield:** Of course most corporate managers give less emphasis to yield as compared to security and liquidity of investment. They, therefore, prefer short-term Government securities for investing surplus cash. However, some corporate managers follow aggressive investment policies which maximise the yield on their investments.

(iv) **Maturity:** Surplus cash is available not for an indefinite period. Hence, it will be advisable to select securities according to their maturities keeping in view the period for which surplus cash is available. If such selection is done carefully, the finance manager can maximise the yield as well as maintain the liquidity of investments.

For example, a firm can divide the surplus cash available with it in three categories.

(i) Surplus cash, which is to be made available for meeting unforeseen disbursements. Such cash should, therefore, be invested in securities which can be immediately sold without much loss. In case of such cash, liquidity is more important than yield.

(ii) Surplus cash, which is to be made available on certain definite dates for making specific payments, such as those on account of tax, dividends capital expenditure, etc. Such cash should, therefore, be invested in securities whose maturities coincide with the dates of payments.

(iii) Surplus cash, which is a sort of general reserve and not required to meet any specific payment. Such cash can, therefore, be invested in securities with relatively longer maturities and more favourable yields.

Types of short-term investment opportunities

The following short-term investment opportunities are available to companies in India to invest their temporary cash surplus:

1. Treasury bills

Treasury Bills (TBs) are short-term government securities. The usual practice in India is to sell treasury bills at a discount and redeem them at par on maturity. The difference between the issue price and the redemption price, adjusted for the time value of money, is return on treasury bills. They can be bought and sold any time, thus, they have liquidity. Also, they do not have the default risk.

2. Commercial papers

Commercial Papers (CPs) are short-term unsecured securities issued by highly credit worthy large companies. They are issued with a maturity of three months to one year. CPs are marketable securities and, therefore, liquidity is not a problem.

3. Certificates of deposits

Certificates of Deposits (CDs) are papers issued by banks acknowledging fixed deposits for specified period of time. CPs are negotiable instruments that make them marketable securities.

4. Bank deposits

A firm can deposit its temporary cash in a bank for a fixed period of time. The interest rate depends on the maturity period. For example, the current interest rate for a 16 to 30 days deposit is about 5 per cent and for 180 days to one year is about 8 per cent. The default risk of the bank deposits is quite low since most banks in India are owned, by the Government.

5. Inter-corporate deposits

Inter-corporate lending/borrowing or deposits (ICD) is a popular short- term investment alternative for companies in India. Generally a cash surplus company will deposit (lend) its funds in a sister or associate

companies or with outside companies with high credit standing. In practice, companies can negotiate inter-corporate borrowing or lending for very short periods. The risk of default is high, but returns are quite attractive.

6. Money market mutual funds

Money Market Mutual Funds (MMMF) focus on short-term marketable securities such as TBs, CPs or call money. They have a minimum lock-in period of 30 days, and after this period, an investor can withdraw his or her money any time at a short notice or even across the counter in some cases. They offer attractive yields; yields are usually 2 per cent above than on bank deposits of same maturity. MMMFs are of recent origin in India, and they have become quite popular with institutional investors and some companies. MMMFs have been recently offered by Kothari Pioneer, Unit Trust of India (UTI) and Industrial Development Bank of India (IDBI). UTI's MMMF schemes are most successful so far.

7. Badla Financing

Badla financing is used in stock exchange transactions when a broker wants to carry forward his transactions from one settlement period to another. Badla financing is done through operators in stock exchange. It is the financing o I' transactions of a broker who wants to carry forward this deal to the other settlement period. The badla rates are decided on the day of settlement. Badla transaction is financed on the security of shares purchased whose settlement is to be carried forward. Sometimes, this financing facility may be extended for a particular share only. For example, a company may provide badla finance to a broker ₹ 10 crore for purchasing ACC shares in forward market. Badla rates vary with demand and supply position of funds.

Badla financing offers attractive interest rates. However, it becomes risky if the broker defaults in his commitment. Even the wide fluctuation in prices of shares may also affect the value of security. An investor in this type of financing should be careful about following things:

(i) The selection of a broker should be on the basis of reputation.

(ii) The share with a sound intrinsic value should be selected.

(iii) The margin should be adequate.

(iv) The possession of securities should be taken.

8. Bill Discounting

A bill arises out of credit sales. The buyer will accept a bill drawn on him by the seller. In order to raise funds the seller 'may get the bill discounted with his bank. The bank will charge discount and release the balance amount to the drawer. These bills normally do not exceed 90 days.

A company may also discount the bills as a bank does this, using its surplus funds. The bill discounting is considered superior to intercorporate deposits. The company should ensure that the discounted bills are (a) trade bills (resulting from a trade transaction) and not accommodation bills (helping each other). (b) the bills backed by the letter of credit of a bank will be most secure as these are guaranteed by the drawee's bank.

9.5 CHECK YOUR PROGRESS

1. Cash management is concerned with
   A. management of collection
   B. disbursement of cash,
   C. determination of optimum amount of cash and
   D. investment of surplus cash
   E. All of the above
2. Concentration Banking is a method of:
   A. Slowing cash flows
   B. accelerating cash flows
   C. Both
   D. None
3. Lock box system is a method of:
   A. Slowing cash flows
   B. accelerating cash flows
   C. Both
   D. None
4. Using float is a method of:
   A. Slowing cash flows
   B. accelerating cash flows
   C. Both

D. None

5. Which model prescribes two control limits-upper limit and lower limit?

A. EOQ model

B. stochastic model

C. both a and b

D. none

9.6 SUMMARY

Cash management is a process that involves collecting and managing cash flows. It is also known as treasury management Chief financial officers, business managers, and corporate treasurers are usually the main individuals responsible for overall cash management strategies, stability analysis, and cash related responsibilities.

Many businesses fail at cash management and the reasons vary. Typically, a poor understanding of the cash flow cycle, profit versus cash, lack of cash management skills, and bad capital investments are the reasons for failing at cash management**.**

The exact nature of a cash management system would depend upon the organizational structure of an enterprise. The four motives for holding cash are Transaction need, Speculative needs, Precautionary needs and Compensation motive. Cash budget represents cash requirements of business during the budget period. There are various methods to speed up collection process. According to William J Baumol's Economic Order Quantity model, optimum cash level is that level of cash where the carrying costs and transaction costs are the maximum. According to Miller–Orr Cash Management model, the net cash flow is completely stochastic.

9.7 KEYWORDS

Cash: It is one of the components of current assets and a medium of exchange for the purpose of transactions.

Optimal Cash Balance: It is that cash balance where the firm's opportunity cost equals transactions cost and the total cost is minimum.

Cash Budget: It is a statement showing the estimated cash inflows and cash outflows over a planning period.

Float: It is the amount of the money tied up in cheques that have been written but not yet collected.

9.8 SELF ASSESSMENT TEST

Q.1 Explain the principal motives for holding cash.

Q.2 Illustrate with example the modus operandi of preparing a cash budget.

Q.3 Discuss the techniques that can be used to accelerate the firm's collections?

Q.4 What are the objectives of a firm in controlling its disbursements? How can the disbursements be slowed down?

Q.5 How can be appropriate level of operating cash balance be determined?

Q.6 Explain the criteria that a firm should use in choosing the short-term investment alternatives in order to invest surplus cash.

9.9 ANSWERS TO CHECK YOUR PROGRESS

1. E
2. B
3. B
4. A
5. B

9.10 REFERENCES/SUGGESTED READINGS

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