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DR.BABASAHEB AMBEDKAR OPEN UNIVERSITY

BBA

BACHELOR OF BUSSINESS ADMINISTRATION

BBAR-202

Financial Management

FINANCIAL MANAGEMENT

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ROLE OF SELF INSTRUCTIONAL MATERIAL IN DISTANCE LEARNING

The need to plan effective instruction is imperative for a successful distance teaching repertoire. This is due to the fact that the instructional designer, the tutor, the author (s) and the student are often separated by distance and may never meet in person. This is an increasingly common scenario in distance education instruction. As much as possible, teaching by distance should stimulate the student's intellectual involvement and contain all the necessary learning instructional activities that are capable of guiding the student through the course objectives. Therefore, the course / self-instructional material are completely equipped with everything that the syllabus prescribes.

To ensure effective instruction, a number of instructional design ideas are used and these help students to acquire knowledge, intellectual skills, motor skills and necessary attitudinal changes. In this respect, students' assessment and course evaluation are incorporated in the text.

The nature of instructional activities used in distance education self- instructional materials depends on the domain of learning that they reinforce in the text, that is, the cognitive, psychomotor and affective. These are further interpreted in the acquisition of knowledge, intellectual skills and motor skills. Students may be encouraged to gain, apply and communicate (orally or in writing) the knowledge acquired. Intellectual- skills objectives may be met by designing instructions that make use of students' prior knowledge and experiences in the discourse as the foundation on which newly acquired knowledge is built.

The provision of exercises in the form of assignments, projects and tutorial feedback is necessary. Instructional activities that teach motor skills need to be graphically demonstrated and the correct practices provided during tutorials. Instructional activities for inculcating change in attitude and behavior should create interest and demonstrate need and benefits gained by adopting the required change. Information on the adoption and procedures for practice of new attitudes may then be introduced.

Teaching and learning at a distance eliminates interactive communication cues, such as pauses, intonation and gestures, associated with the face-to-face method of teaching. This is particularly so with the exclusive use of print media. Instructional activities built into the instructional repertoire provide this missing interaction between the student and the teacher. Therefore, the use of instructional activities to affect better distance teaching is not optional, but mandatory.

Our team of successful writers and authors has tried to reduce this.

Divide and to bring this Self Instructional Material as the best teaching and communication tool. Instructional activities are varied in order to assess the different facets of the domains of learning.

Distance education teaching repertoire involves extensive use of self- instructional materials, be they print or otherwise. These materials are designed to achieve certain pre-determined learning outcomes, namely goals and objectives that are contained in an instructional plan. Since the teaching process is affected over a distance, there is need to ensure that students actively participate in their learning by performing specific tasks that help them to understand the relevant concepts. Therefore, a set of exercises is built into the teaching repertoire in order to link what students and tutors do in the framework of the course outline. These could be in the form of students' assignments, a research project or a science practical exercise. Examples of instructional activities in distance education are too numerous to list. Instructional activities, when used in this context, help to motivate students, guide and measure students' performance (continuous assessment)

PREFACE

We have put in lots of hard work to make this book as user-friendly as possible, but we have not sacrificed quality. Experts were involved in preparing the materials. However, concepts are explained in easy language for you. We have included many tables and examples for easy understanding.

We sincerely hope this book will help you in every way you expect. All the best for your studies from our team!

FINANCIAL MANAGEMENT

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BBAR-202/DBAR-202

FINANCIAL MANAGEMENT

BLOCK-1 BASICS OF FINANCIAL MANAGEMENT

UNIT 1

INTRODUCTION TO FINANCIAL MANAGEMENT

UNIT 2

SOURCES OF LONG -TERM FINANCE

UNIT 3

SOURCES OF SHORT TERM FINANCE

UNIT 4

TIME VALUE OF MONEY

BLOCK 1 : BASICS OF FINANCIAL MANAGEMENT

Block Introduction

Finance is considered to be one of the most important aspects of any business unit, be it small or large scale unit, every business needs finance and without finance none of the business can survive and it is because of this reason the subject of financial management has been introduced in all management and finance related curriculum.

In this block the whole content has been divided into four units. Unit 1 gives an introduction to the subject financial management, whereas the unit 2 discusses about the various sources of long term sources of finance available infront of an organisation. In unit 1 we will be discussing the main functions covered by the financial management, we shall also be studying the objectives of financial management. The role of a finance manager is even very important in the smooth running of the organisation. He has to regularly monitor the finance condition of an organisation. He will have to know as to how much funds will be required in the coming days in an organisation. He has to estimate the funds requirements and arrange the required funds from different sources. He has to even find the different sources through which funds can be raised. He has to properly take care of availability of funds because in absence of funds the whole functioning of the organisation will come to halt. Apart from this in unit 2nd we will be discussing the various long term sources of finance available in front of an organisation through which they can meet their funds requirement. Unit no 3 stands for sources of short term finance where important sources are discussed. Unit no 4 stands for time value of money - where future value and present value are discussed.

So the study of this block is going to be of great help for the future managers and entrepreneurs in laying the foundation of basics of finance into their minds and giving them an idea of what exactly is this subject all about.

Block Objective

After learning this block you will be able to understand:

- The main functions of financial management.
- Objectives of the financial management.
- The role of finance manager.
- The scope of Corporate Finance
- The Need for Long-term Finance
- Long Term Finance
- Equity Capital and Preference Capital, Debenture Capital, Term Loans, Convertible Debentures and Warrants
- Risk return ratio of the different sources
- Short term sources of finance
- Time value of money
- Concept of future value
- Concept of present value

Block Structure

Unit 1 : Introduction to Financial Management

Unit 2 : Sources of Long-Term Finance

Unit 3 : Short term sources of finance

Unit 4 : Time value of money

INTRODUCTION TO FINANCIAL MANAGEMENT

: UNIT STRUCTURE :

1.0 Learning Objectives

After learning this unit, you will be able to understand:

- The main functions covered by the financial management.
- The main objectives of the financial management.
- The role of finance manager.
- The linkage of the finance functions with other functional areas.
- The scope of Corporate Finance.

1.1 Introduction

In this unit, the students will be introduced to the basics of Financial Management. Objective of financial management is the maximization of shareholder's wealth and necessarily the profits of the business. Three basic functions of financial management are financial function, investment function, and dividend function. Students will also learn that the role of finance manager has significantly changed over the years.

1.2 Finance

1.2.1 Meaning and Definition

Finance is an integral part of the overall management rather than the fund raising activities. It is connected with all financial activities of planning, raising, allocating and controlling. The scope of financial management is very wide.

Financial management holds the key to all activities. Finance may be regarded as a science, for it is a systematized body of knowledge of the phenomenon of the payment system. Finance is the management of monetary affairs of a company. It includes determining what has to be paid for and when, raising the money on the best terms available and diverting the available funds to the best uses.

– Paul G.Husings

"Finance has to be co-related with production, marketing and accounting functions of organization in order to reduce or avoid the wastage of funds."

– Charles Gesten berg.

Check your progress 1

1. Finance has to be co-related with production, marketing and accounting functions of organization in order to reduce or avoid the wastage of funds.
   a. Paul G.Husings
   b. Charles Gestenberg.

1.3 Financial Management

Financial Management is an integral part of general management. It concerns managerial decision making. It helps in allocation of future financial requirements, allocation of resources and appraisal of financial problems.

Definition of Financial Management

"Financial management deals with how the corporations obtain the funds and how it uses them." ***– Hoagland***

"Financial Management is the application of planning and control functions to the finance function." ***– Archer and Ambrosio***

"Financial management may be considered to be the management of the finance function." ***– Raymond Chambers***

Financial management is the area of business management devoted to a judicious use of capital and a careful selection of sources of capital in order to enable abusiness firm to move in the direction of reaching its goals.

– J.F. Bradley

Check your progress 2

1. Financial management deals with how the corporations obtain the funds and how it uses them.
   a. J.F. Bradley
   b. Hoagland

1.4 Scope of Financial Management

Scope of Financial Management:

- Forecasting [estimation of the financial requirements]
- Financing [acquisition of capital]
  - o Allocation of funds
  - o Investment of funds
  - o Raising funds
- Co-ordination and control of funds [capital budgeting]
- Profit planning and control
- Decision Making
  - o Financial decisions
  - o Investment decisions
  - o Working capital decisions
  - o Dividend decisions

Check your progress 3

1. ..... is one of the scope of financial management.
   a. money
   b. finance
   c. Forecasting

1.5 Finance and Management Functions

The important management functions are production, marketing and other functions. There exists inseparable relationship between finance and the other functions. Almost all business activities, directly or indirectly involve the acquisition and use of funds.

BASICS OF FINANCIAL MANAGEMENT

The finance function of raising and using money although has a significant effect on the other functions, yet it need not necessarily limit or constrain the general running of the business.

The functions of raising funds, investing them in assets and distributing returns earned from assets to shareholders are respectively known as financing decision, investment decision and dividend decision. A firm attempts to balance cash inflows and outflows while performing these functions. This is called liquidity decision.

The finance function includes:

- Long term asset-mix or investment decision.
- Capital mix or financingdecision.
- Profit allocation or dividend decision.
- Short term asset mix or liquidity decision.

Finance functions call for skilful planning, control and execution of a firm‘s activities.

1. Investment decision

- A firm‘s investment decision involves capital expenditure.
- A capital budgeting decision involves the decision of allocation of capital or commitment of funds to long term assets that would yield benefits (cash flows) in the future.

Important aspects of investment decisions:

- The evaluation of the prospective profitability of new investments.
- The measurement of a cut off rate against the prospective return of new investments could be prepared.
- Investment proposals should be evaluated in terms of both expected return and risk.
- It also includes replacement decision i.e. decision of recommitting funds when an asset becomes less productive or non-profitable.
- The opportunity cost of capital is the expected rate of return that an investor could earn by investing money in financial assets of equivalent risk.

2. Financing Decision

Financial manager must decide when, where, from whom and how to acquire funds to meet the firm‘s investment needs. To determine the appropriate proportion of equity and debt is the main aim. The mix of debt and equity is known as the firm‘s capital structure. The finance manager must strive to obtain the best financing mix or the optimum capital structure for his firm. Capital structure is considered optimum when the market value of shares is maximized.

The change in the shareholder‘s returns caused by the change in profits is called financial leverage.

There must be a proper balance between return and risk. When the shareholder‘s return is maximized with given risk, the market value per share will be maximized and the firm‘s capital structure will be considered optimum.

In practice, a firm considers many other factors such as control, flexibility, loan covenants, legal aspects etc. in deciding the capital structure.

3. Liquidity Decision

Investments in current assets affect the firm‘s profitability and liquidity. Current assets should be managed efficiently for safe guarding the firm against the risk of liquidity. Lack of liquidity in extreme situations can lead to firm‘s insolvency.

A conflict exists between profitability and liquidity while managing current assets. If the firm doesn‘t invest sufficient funds in current assets, it may become illiquid and risky and would lose profitability, as idle current assets would not earn anything.

The profitability-liquidity trade off requires that the financial manager should develop sound techniques for managing current assets. He should estimate firm‘s needs for current assets and make sure that funds would be made available when needed.

4. Dividend Decision

The financial manager must decide whether the firm should distribute all profits or retain them, or distribute a portion and retain the balance. The proportion of profits distributed as dividends is called the dividend-pay off ratio.

The dividend policy should be determined in terms of its impact on the shareholder‘s value.

The optimum dividend policy is one that maximizes the market value of the firm‘s shares.

Dividends are generally paid in cash. But a firm may issue bonus shares.

The function of financial management is to review and control decisions to commit or recommit funds to new or ongoing uses. Thus, in addition to raising funds financial management is directly concerned with production, marketing and other functions within an enterprise whenever decisions are made about the acquisition or distribution of assets.

Check your progress 4

1. The mix of debt and equity is known as the firm‘s .....
   a. capital ratio
   b. capital structure
2. ..... must decide when, where, from whom and how to acquire funds to meet the firm‘s investment needs.
   a. HR Manager
   b. Financial manager

3. ..... assets should be managed efficiently for safe guarding the firm against the risk of liquidity.
   a. Current
   b. fixed
4. The proportion of profits distributed as ..... is called the dividend-pay off ratio.

a. dividends

b. interest

1.6 Objectives of Financial Management

Financial management evaluates how funds are used and procured. The core of financial policy is to maximize earnings in the long run and optimize them in the short run. Financial management is an improved resource, mainly capital funds. The firm‘s investment and financing decisions are unavoidable and continuous. In order to make them rationally, the firm must have a goal. A firm‘s financial management may have the following as their objective:

- Maximization of firm’s profit
- Maximization of firm’s wealth

1.6.1 Maximization of Firm’s Profit/Profit Maximization

The maximization of profit is often considered as an implied objective of a firm. To achieve the a for said objective various types of financial decisions may be taken. Firms producing goods and services may function in a market economy. In a market economy prices of goods and services are determined in competitive markets. Firms in the market economy are expected to produce goods and services desired by society as efficiently as possible.

Price system is the most important aspect of market economy which indicates what goods and services society wants.

Higher demand for goods and services leads to higher prices resulting in higher profit for firms. It attracts other producers due to which competition in the market increases. An equilibrium price is reached when the supply of goods in a market matches the demand for those goods. The prices and profits of those goods and services tend to fall which has no demand by the society. Prices are determined by the demand and supply conditions as well as the competitive forces and they guide the allocation of resources for various productive activities.

Profit maximization implies that a firm either produces maximum output for a given amount of input or uses minimum input for producing a given output. It is assumed that profit maximization causes the efficient allocation of resources under competitive market conditions and profit is considered as the most appropriate measure of a firm’s performance.

Objections/ criticism to profit maximization

This objective has been criticized. It is argued that profit maximization assumes perfect competition and in the phase of imperfect competition it falls to achieve its goal.

In the new business environment, profit maximization is regarded as unrealistic, difficult, inappropriate and immoral. There is a possibility of production of goods and services that are wasteful and unnecessary from the society's point of view. Also, it might lead to inequality of income and wealth. Firms producing same goods and services differ substantially in terms of technology, costs and capital. In such conditions, it is difficult to have a truly competitive price system and thus, it is doubtful if the profit maximizing behaviour will lead to optimum social welfare.

1.6.2 Wealth Maximization

Wealth maximization objective is as important as profit maximization. The operating objective of financial management is to maximize wealth or NPV (Net Present Value) of a firm.

The wealth of owners of a corporation is maximized by raising the price of the common stock. This is achieved when the management of a firm operates efficiently and makes optimal decisions in areas of capital investment, financing, dividend and current assets management.

The market price of a firm's stock represents the focal judgment of all market participants as to what the value of a particular firm is. It takes into account present and prospective future earnings per share, the timing and risk of these earnings, the dividend policy of the firm and many other factors that bear upon the market price of the stock.

The value/wealth maximization objective of a firm is superior to profit maximization objective due to the following reasons:

- The value maximization objective of a firm considers all future cash flows, dividends, EPS, risk of a decision etc. whereas profit maximization objective does not consider the effect of EPS, dividend paid or any other returns to shareholders.
- A firm that wishes to maximize the shareholder's wealth may pay regular dividends, whereas a firm that wishes to maximize profit may refrain from paying dividend payment to its shareholders.
- Shareholders would prefer an increase in the firm's wealth against its generation of increasing flow of its profits.
- The market price of a share reflects the shareholder's expected return considering the long term prospects of the firm, reflects the differences in timings of the returns, considers risk and recognizes the importance of distribution orreturns.

The maximization of a firm's value as reflected in the market price of a share is viewed as a proper goal of the firm. The profit maximization can be considered as a part of wealth maximization.

Other Maximization Objectives

Sales Maximization: The interests of the company are best served by the maximization of sales revenue, which brings with it the benefits of growth, market share and status. The size of the firm, prestige, and aspirations are more closely identified with sales revenue than with profit.

Growth Maximization: Managers seek the objectives which give them satisfaction, such as salary, prestige, status and job security. On the other hand,the owners of the firm (shareholders) are concerned with market values such as profit, sales and market share. These differing sets of objectives are reconciled by concentrating on the growth of size of the firm, which brings with it higher salaries and status for managers and larger profits and market share for the owners of thefirm.

Return on Investment Maximization: The strategic aim of abusiness enterprise is to earn a return on capital. If, in any particular case, the return in the long-run is not satisfactory, then the deficiency should be corrected or the activity be abandoned for a more favourable one. Measuring the historical performance of an investment centre calls for a comparison of the profit that has been earned with capital employed. The rate of return on investment is determined by dividing net profit or income by the capital employed or investment made to achieve that profit. Return on investment analysis provides a strong incentive for optimal utilization of the assets of the company. This encourages managers to obtain assets that provide satisfactory return on investment and to dispose off assets that are not providing an acceptable return. In selecting amongs alternative long-term investment proposals, ROI provides a suitable measure for assessment of profitability of each proposal.

Social Objectives - The business enterprise is an integral part of the functioning of a country. As such, in return for the privileges and rights granted to it by the state, the business firm should be made increasingly responsible for social objectives. The objectives of social accounting include:

- To identify and measure the net social contribution of an individual firm internally and also those arising from external factors affecting the different segments of the society.
- To determine whether an individual firm‘s strategies and practices are consistent with widely shared social principles, e.g. discrimination on the basis of caste, creed or sex will not be permitted.

To make available, relevant information about the firm‘s goals, policies, programmes, performances, use of and contribution to scarce resources etc. for example, companies have to disclose their use and earnings of foreign exchange. Relevant information is that which provides for public accountability and also facilitates public decision making regarding capital choices and social resources allocation.

Financial Objectives of a Firm - The primary financial objectives of a firm are as follows:

- Return on capital employed or return on investment
- Value addition and profitability
- Growth in earnings per share and price/earnings ratio
- Growth in the market value of the share
- Growth in dividends to shareholders
- Optimum level of leverage

- Survival and growth of thefirm

Check your progress 5

1. ..... is one of the long term objective of financial management.

a. Maximization of firm‘s wealth

b. maximisation of firms’s profit

2. ..... evaluates how funds are used and procured.

   a. management

   b. Financial management

3. The core of financial policy is to maximize earnings inthe ..... run and optimize them in the short run.

   a. short

   b. long

4. In a market economy prices of goods and services are determined in ..... markets.

   a. competitive

   b. good

5. ..... maximization implies that a firm either produces maximum output for a given amount of input or uses minimum input for producing a given output.

   a. wealth

   b. Profit

1.7 Role and Functions of Finance Manager

A finance manager is a person who is responsible to carry out the finance functions. He is one of the members of the top management team and his role is more intensive and significant in solving the complex funds management problems. The finance manager is responsible for shaping the fortune of the enterprise and is involved in the most vital decision of the allocation of capital. He/she must have abroader and farsighted outlook and must ensure that the funds of the enterprise are utilized in the most efficient manner.

- He/she plays instrumental role in the overall functioning of anenterprise.
- He is recognized as an integral part of corporate management.
- He is involved in almost all the crucial decision making affairs because every problem and every decision entails financial implications.
- He groups activities in such a way that areas of responsibility and accountability are clearly defined.
- His focus is on profitability of the firm.
- He is in charge of planning, developing strategies and guiding the management in all financial decisions.
- Preparation of financial planning, planning for investment economic appraisal, cost reduction strategies, protection of assets and preparation of annual report and other important issues are looked after him.

- He is also responsible for maintaining good relationship with the banker and financia linstitutions.
- He has to fulfil the requirements of periodical payment of interest and the principal.
- He is also responsible for submitting the regular inventory statements, cash and fund flow statements to the banker as per the terms and conditions of the loan agreements.
- He has to take key decisions on the allocation and use of money by various departments.
- He should anticipate financial needs, acquire financial resources and allocate funds to various departments of the business.

Since the financial manager is an integral part of the top management, he should shape his decisions and recommendations to contribute to the overall progress of the business. It is his prime objective to maximize the value of the firm to its stockholders.

A financial manager often finds himself in a dilemma when he has to choose between profitability and liquidity. Although both are desirable, sometimes one has to be sacrificed for the other. His central role requires that he understands the nature of problems so that he may take proper decisions. Apart from this the main functions of a financial manager are:

- Funds raising
- Funds allocation
- Profit planning
- Understanding capital markets

Check your progress 6

1. is one of the main functions of finance manager.
   a. marketing
   b. Funds raising
2. A finance manager is a person who is responsible to carry out the ..... function.
   a. finance
   b. marketing
3. The finance manager is responsible for shaping the fortune of the enterprise and is involved in the most vital decision of the allocation of .....
   a. capital
   b. finance
4. A financial manager often finds himself in a dilemma when he has to choose between profitability and .....
   a. returns
   b. liquidity

1.8 Changing Role of Finance Manager

The information age has given a fresh perspective on the role of finance management and finance managers. The role of the CFO has emerged and acts as a catalyst to facilitate changes in an environment where the organization succeeds through self managed teams. The CFO must transform himself from aback office manager to a front end organizer and leader who spends more time in networking, analyzing the external environment, making strategic decisions and managing and protecting cash flows. In due course of time the role of the CFO will shift from an operational to a strategic level. Of course on an operational level, the CFO can‘tbe excused from his backend duties. The knowledge requirements for the evolution of a CFO extend from being aware about capital productivity and cost of capital to human resource initiatives and competitive environment analysis. He has to develop general management skills for the wider focus encompassing all aspects of business that depend on or dictate finance.

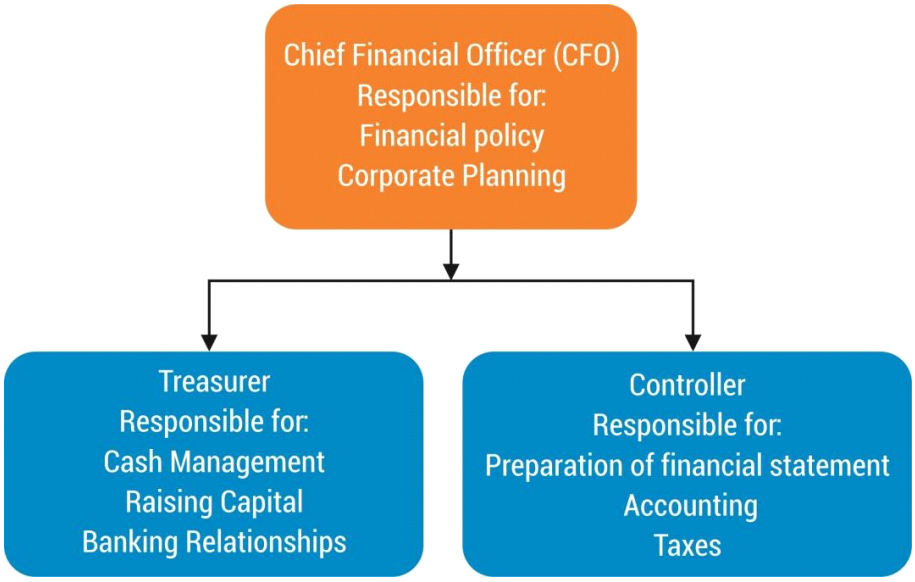


Fig 1.1 Changing role of finance manager

Financing Decisions

Relationship between Investment, Financing and Dividend decisions

The corporate finance theory has broadly categorized the financial decisions into investment, financing and dividend decisions. All these financial decisions aim at the maximization of shareholder‘s wealth through maximization of firm‘s wealth.

Investment decisions

The firm should select only those capital investment proposals whose net present value is positive and the rate of return on the project exceeds the marginal cost of capital. In situations of capital rationing, the investment proposals are selected based on maximization of net present value. The profitability of each individual project will contribute to the overall profitability of the firm and leads to creation of wealth.

Financing decisions

In general, the financing of capital investment proposals are done in two forms of finances i.e. equity and debt. The finance decisions should consider the cost of finance available in different forms and the risks attached to it. The reduction in cost of capital of each component would lead to reduction in overall weighted average cost of capital. The principle of trading on equity should be kept in view while selecting the debt-equity mix or capital structure decisions. The relative advantages and risk attached to debt financing and equity financing should also be considered. The lower cost of capital and minimization of risks in financing will lead to the profitability of the organization and create wealth to the owners.

Dividend decisions

The dividend distribution policies and retention of profits will have ultimate effect on the firm‘s wealth. The company should retain its profits in the form of reserves for financing its future growth and expansion schemes. The conservative dividend payments will adversely affect the firm‘s share prices in the market. Therefore, an optimal dividend distribution policy will lead to the maximizationof shareholder’s wealth.

In conclusion, it is viewed that the basic aim of the investment, financing and dividend decisions is to maximize the firm‘s wealth. If the firm enjoys the stability and growth, its share prices in the market will improve and will lead to capital appreciation of shareholder‘s investment and ultimately maximizes the shareholder‘s wealth.

Check your progress 7

1. The firm should select only those capital investment proposals whose net present value is .....
   a. equal
   b. negative
   c. positive
2. The firm should select only those capital investment proposals whose net present valueis .....
   a. positive
   b. negative
3. In general, the financing of capital investment proposals are done in two forms of finances i.e._..... and debt
   a. loan
   b. equity

1.9 Organization of Finance Function

1.9.1 The Interface of Financial Policy with Corporate Strategic Management

The two important functions of the finance manager are:

- Allocation of funds (investment decision)

- Generation of funds (financingdecisions)

The theory of finance makes two crucial assumptions to provide guidance to the finance managers in making these decisions. These are:

- The objective of the firm is to maximize the wealth of the shareholders.
- The capital markets are efficient. The corporate finance theory implies that :
- Owners have the primary interest in the firm.
- The current value of share is the measure of shareholder‘s wealth.
- Introduction To Financial Management
- The firm should accept only those investments which generate positive net present values.
- The firm‘s capital structure and dividend decisions are irrelevant as they are solely guided by efficient capital markets and management no control over them.

However, the theory of finance has undergone fundamental changes overthe past. It is felt that finance theory is not complete and meaningful without its linkage with the strategic management. Strategic management establishes an efficient and effective match between the firm‘s competence and opportunities with the risks created by the environmental changes.

1.9.2 Interface of Finance Policy and Strategic Management

- Finance policy requires the resource deployment such as materials, labour etc. Strategic management considers all markets such as material, labour and capital as imperfect and changing. Strategies are developed to manage the business firms in uncertain and imperfect market conditions and environment. For forecasting, planning and formulation of financial policies, for generation and allocation of resources, the finance manager is required to analyze changing market conditions and environment.
- The strategy focuses on how to compete in a particular product market segment or industry. For framing strategy it is considered that the shareholders are not the only interested group in the firm. There are many other influential constituents such as lenders, employees, customers, suppliers etc. The success of a company depends on its ability to survive in product market environment which is possible only when the company considered maintaining and improving its product market positions. Such considerations have important implications for framing corporate financial policies.

  Hence, the financial policy of a company is closely linked with its corporate strategy.

The company‘s strategy establishes an efficient and effective match between its competencies and opportunities and environmental risks. Financial policies of a company should be developed in the context of its corporate strategies. With the overall framework of the firm‘s strategy there should be a

consistency between financial policies - investment,debtand dividend e.g. a company can sustain a high growth strategy only when investment projects generate high profits and it follows a policy of low payout and high debt.

1.9.3 Inter relationship between Investment Financing and Dividend Decisions

The finance functions are divided into 3 major decisions viz. investment, financing and dividend decisions. It is correct to say that these decisions are interrelated because the under lying objective of these 3 decisions is the same i.e. maximization of the shareholder‘s wealth. Since investment financing and dividend decisions are all interrelated one has to consider the joint impact of these decisions on the market price of the company‘s share and these decisions should also be solved jointly. The decision to invest in a new project needs finance for investment. The financing decision in turn is influenced by dividend decision because retained earnings used in internal financing deprive shareholder of their dividends. An efficient finance management can ensure optimal joint decisions. This is possible by evaluating each decision in relation to its effects on the shareholder‘s wealth.

The impact of taxation on corporate financial management

The tax payments represent a cash outflow from business and therefore these tax cash outflows are critical part of the financial decision making in a business. Taxation affects a firm in numerous ways. The most significant effectsare asunder:

Tax implication and financial planning: While considering the financial aspects or arranging the funds for carrying out the business, the tax implications arising there should also be taken into account. The income of the business undertakings is subject to tax at the rates given in finance act.

- The weighted average cost of capital is reduced because interest payments are allowable for computing taxable income.
- Where a segment of the firm incurs loss but the firm gets overall profits from other segments
- The income tax act allows depreciation on plant, furniture, and buildings owned by the assessed and used by him for carrying on his business, occupation and profession.This deprecation is allowed for full year if an asset was used for the purpose of business or profession for more than 180 days. Unabsorbed depreciation can be carried forward indefinitely.

Capital budgeting decisions: The setting up of a new project involves consideration of tax effects. The decision to set up a project under a particular form of business organization at a particular place, choice of nature of business, and the type of activities to be undertaken etc. requires that a number of tax considerations should be taken into account before arriving at the appropriate decision from the angle of sound financial management. The choice of particular manufacturing activity may be influenced by the special tax concessions available such as-

- Higher depreciation allowance

- Amortization of expenditure on know-how, scientific research related to business, preliminary expenses etc.
- Deductions in respect of profit derived from the publication of books etc.
- Deductions in respect of profit derived from export business.

Check your progress 8

1. ..... policy requires the resource deployment such as materials, labour etc.
   a. Insurance
   b. Tax
   c. Finance
2. The two important functions of the finance manager are ..... and generation of funds.
   a. allocation of funds
   b. distribution of funds
3. policy requires the resource deployment such as materials, labour etc.
   a. marketing
   b. Finance

1.10 liquidity and Profitability

Ezra Solorfion states that liquidity measures a company‘s ability to meet expected as well as unexpected requirements of cash to expand its assets, reduce its liabilities and cover up any operating losses.

The balancing of liquidity and profitability is one of the prime objectives of a finance manager. To maintain concern‘s liquidity, the finance manager is expected to manage all its current assets and liquid assets in such a way as to ensure its affectivity with a view to minimize its costs. Under profitability objective, the finance manager has to utilize the funds in such a manner as to ensure the highest return. Profitability concept signifies the operational efficiency of an organization by value addition through the utilization of resources i.e., men, materials, money and machines. It refers to a situation in terms of efficiency in utilization of resources to achieve profit maximization for the owners. Whereas liquidity means the ability of the organization to realize value in money, and its ability to pay in cash the obligations that are due for payment. There is an inverse relationship between Profitability and liquidity. The higher the liquidity the lower will be the profitability and vice versa. Sometimes even if the profit from operations is higher, the firm may face liquidity problems due to the fact that the amount representing the profit may be in the form of current assets like inventory, debtors-other than in the form of cash and bank balances. In situations where the firm faces the liquidity problems, will hamper the working of the company which result in lower profita- bility of the firm. If more assets of the firm are held in the form of highly liquid assets it will reduce the profitability of the firm. Lack of liquidity may lead to lower rate of return, loss of business opportunities etc. Therefore, a firm should maintain a trade off situation where the firm maintains its optimum liquidity for greater profitability.

Check your progress 9

1. The balancing of liquidity and profitability is one of the prime objectives of a manager.
   c. Human Resource
   d. Finance
   a. Admin
   b. General

1.11 Financial Management and Accounting

Similar to production and sales, finance is an independent specialized function, integrated with other functions. Financial management is a separate management area. Many organizations have one department for accounting and finance functions and the finance function is often considered as part of the functions of the Accountant. But the Financial management is something more than an art of accounting and book keeping in the sense that, accounting function discharges the function of systematic recording of transactions relating to the firm‘s transactions in books of account and summarizing the same for presenting in financial statements viz., profit and loss account and balance sheet, funds flow and cash flow statements. The finance manager uses the accounting information in analysis and review of the firm‘s business position to make decisions. Besides the analysis of financial information available from the books of account and records of the firm, a finance manager can also use techniques like capital budgeting techniques, statistical and mathematical models and computer applications in decision making to maximize the value of the firm‘s wealth and value of the owners‘ wealth. Considering these facts, finance function is a distinct and separate function rather than simply an extension of accounting function. Financial management being an important function; many firms prefer to centralize the function to keep constant control on the finances of the firm. Any inefficiency in financial management will be disastrous for the firm, but for the routine matters, the finance function could be decentralized with adoption of responsibility accounting concept. It is advisable to decentralize accounting function to speed-up the process of information. But since the Recounting information is used in taking financial decisions, proper control should be exercised on accounting functions in processing of accurate and reliable information to the needs of the firm. The centralization or decentralization of accounting and finance functions mainly depends on the attitude of the top level management.

Check your progress 10

1. The uses the accounting information in analysis and review of the firm‘s business position to make decisions.
   a. HR manager
   b. director
   c. admin anager
   d. finance manager
2. The finance manager uses the accounting information in ..... of the firm‘s business position to make decisions.
   a. review

b. calculation
c. analysis and review
d. none of the above

1.12 Financial Management and Economics

It is imperative for the finance manager to be familiar with the micro and macroeconomic environment aspects of business. Financial management is based on Economics.

The inverted pyramid of global liquidity

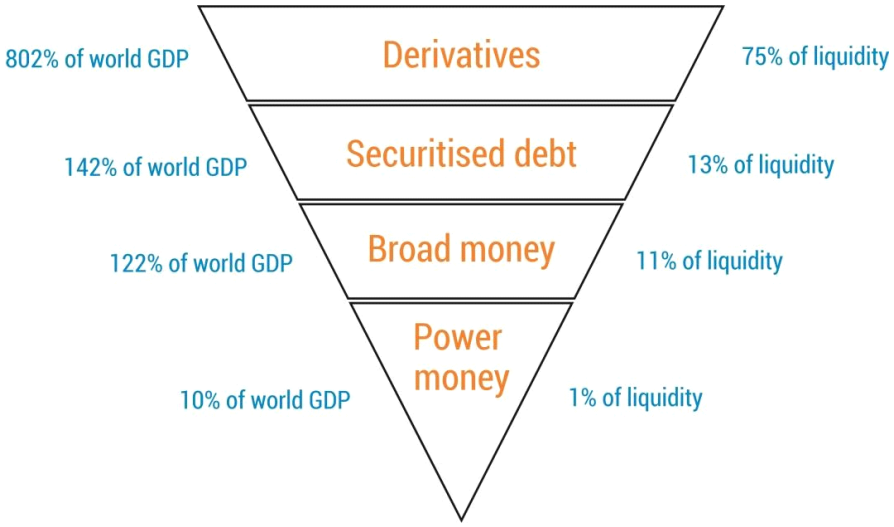


Fig 1.2 Liquidity and Macroeconomics

Microeconomics

This is the study of the economic decisions of individuals and firms. It focuses on the Optimal operating strategies based on the economic data of individuals and firms. The concepts of microeconomics helps the finance manager in taking decisions about price fixation, determination of capacity and operating levels, break-even analysis, volume-cost-profit analysis, capital structure decisions, dividend distribution decisions, profitable product mix decisions, fixation of levels of inventory, setting the optimal cash balance, pricing of warrants and options, interest rate structure, present value of cash flows etc.

Macroeconomics

This looks at the economy as a whole, in which a particular business concern is operating. Macro economics explain policies to control economic activity. The success of the business firm depends upon the overall performance of the economy and is affected by the money and capital markets, since the investible funds are to be procured from the financial markets. A firm operating within the institutional framework operates on the macroeconomics theories. The government‘s fiscal and monetary policy will influence the strategic financial planning of the enterprise. The finance manager must also consider the other macro economic factors like rate of inflation, real interest rates, level of economic activity, trade cycles, market competition both from new entrants and substitutes, international business conditions, foreign exchange

rates, bargaining power of buyers, unionization of labor, domestic savings rate, depth of financial markets, availability of funds in capital markets, growth rate of economy, government foreign policy, financial intermediation and banking system etc.

Check your progress 11

1. ..... is the study of the economic decisions of individuals and firms.
   a. macro economics
   b. micro economics
2. ..... economics looks at the economy as a whole, in which a particular business concern is operating.
   a. micro
   b. Macro
3. A firm operating within the in situational frame work operate son the ..... economics theories.
   a. macro
   b. micro
4. The ..... manager must also consider the other macro economic factors
   a. admin
   b. marketing
   c. HR
   d. finance

1.13 Financial Management-Science or Art 1

Financial management is neither a pure science nor specific an art. It involves various methods and techniques which can be adopted, depending on the situation of business and the purpose of the decision. As a science it uses various statistical and mathematical models and computer applications for solving the financial problems relating to the firm, for example, capital investment appraisal, capital allocation and rationing, optimizing capital structure mix, portfolio management etc. In addition to this, a finance manager is required to apply his analytical skills in decision making. Hence, financial management is both a science as well as an art.

Check your progress 12

1. ..... is neither a pure science nor an art.
   a. finance
   b. accounting
   c. Financial management

1.14 Significance of Financial Management

The importance of financial management can be understood from the following aspects

Applica**bility**: The principles of finance are applicable wherever there is cash flow. The concept of cash flow is one of the central elements of financial analysis, planning control and resource allocation decisions. Cash flow is

important because the financial health of the firm depends on its ability to generate sufficient amounts of cash to pay its employees, suppliers, creditors and owners. Any organisation, whether motivated with earning of profit or not, having cash flow requires to be viewed from the angle of financial discipline. Therefore, financial management is equally applicable to all forms of business like sole traders, partnerships and companies. It is also applicable to non-profit organizations like trusts, societies, government organisations, public sector enterprises etc.

Chances of Failure: A firm having latest technology, sophisticated machinery, highly capable marketing and technical experts, etc. may fail unless its finances are managed on sound principles of Financial Management. The strength of business lies in its financial discipline. Therefore, finance function becomes primary, enabling the other functions like production, marketing, purchase, personnel etc. to be more effective in achievement of organizational goals and objectives.

Return on Investment Anybody who invests his money will earn a reasonable return on his investment. The owners of business try to maximize their wealth. It depends on the amount of cash flows expected to be generated for the benefit of owners, the timing of these cash flows and the risk attached to these cash flows. The greater the time and risk associated with the expected cash flow, the greater is the rate of return required by the owners. The Financial management studies the risk-return perception of the owners and the time value of money.

Check your progress 13

1. The ..... the time and risk associated with the expected cash flow, the greater is the rate of return required by the owners.
   a. greater
   b. lower
2. Anybody who invests his money will earn reasonable on ..... his investment.
   a. dividend
   b. return
3. A firm having all the best resources may fail unless itsare managed on sound principles of Financial Management.
   a. finances
   b. principles

1.15 Strategic Financial Management

Strategic planning is long range in scope and has its focus on the organization as a whole. The concept is based on an objective and comprehensive assessment of the present situation of the organization and the setting up of targets to be achieved in the context of an intelligent and knowledgeable anticipation of changes in the environment. The strategic financial planning involves financial planning, financial forecasting, provision of finance and formulation of finance policies which should lead the firm‘s survival and success. The responsibility of a finance manager is to provide abasis and information of strategic positioning of the firm in the industry. The firm‘s

strategic financial planning should be able to meet the challenges and competition and it would lead to firm‘s failure or success. The strategic financial planning should enable the firm to judicious allocation of funds, capitalization of relative strengths, mitigation of weaknesses, early identification of shifts in environment, counter possible actions of competitor, reduction in financing costs, effective use of funds deployed, timely estimation of funds requirement, identification of business and financial risk etc.

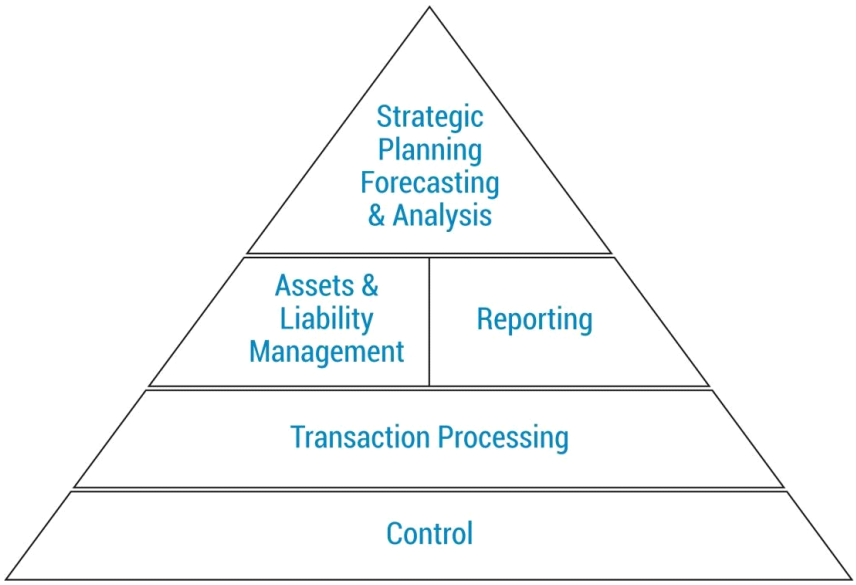


Fig 1.3 The elements of Strategic financial planning

The strategic financial planning is needed to counter the uncertain and imperfect market conditions and highly competitive business environment. While framing financial strategy, the shareholders should be considered as one of the constituents of a group of stakeholder‘s viz., shareholders, debenture holders, banks, financial institutions, government, managers, employees, suppliers, customers etc. The strategic planning should concentrate on multidimensional objectives like profitability, expansion growth, survival, leadership, business success, positioning of the firm, reaching global markets, brand positioning etc. The financial policy requires the deployment of firm‘s resources for achieving the corporate strategic objectives. The financial policy should align with the company‘s strategic planning. It allows the firm in overcoming its weaknesses, enable to maximize the utilization of its competencies and mould the prospective business opportunities and threats to the advantage of the firm. Therefore, the finance manager should take the investment and finance decisions in consonant to the corporate strategy. In accordance with the classical management theory, the financial function of an enterprise has five main objectives, viz., forecasting, organizing, planning, coordination and control. Each of these objectives has its own range of related themes.

Forecasting

- Demand and sales volume/revenues
- Cash flows Prices
- Inflation rates
- Labour union behaviour
- Technology changes

- Inventory requirements

Organizing

- Financial relation
- Liaison with financial institutions and clients
- Accounting system

Planning

- Investment planning
- Man power planning
- Developmentprocess
- Marketing strategies

Co-ordination

- Linking finance function with other areas
- Linking with national budget and five year plans
- Linking with labor union policies
- Liaison with media

Control

- Financial charges
- Achievement of desired objectives
- Overall monitoring of the system
- Equilibrium in the capital

Check your progress 14

1. The finance manager should take the investment and finance decisions in consonant to the .....
   a. Company policy
   b. corporate strategy
2. The requires the deployment of firm‘s resources for achieving the corporate strategic objectives.
   a. financial policy
   b. fiscal policy
3. The ..... financial planning is needed to counter the uncertain and imperfect market conditions and highly competitive business environment.
   a. complete
   b. strategic

1.16 Techniques of Financial Management

The following are some important techniques of Financial Management.

Ratio Analysis - This is an important tool in analysis of financial statements. Ratios are used as an index or yardstick for evaluating the financial position and performance of a firm. Ratio is the expression of one figure in terms of another. It is the expression of the relationship between mutually independent figures. Ratio analysis makes use of financial report and data and summarizes the key relationship in order to appraise financial performance. It is used by the analysts to make quantitative judgment about the financial posi-

tion and performance of the firm. There are various ratios which are used by different parties for different purposes and can be calculated from the information given in financial statements. The comparison of past ratios with future ratios shows the firm‘s relative strength and weaknesses.

Capital Budgeting Techniques - Investment in long-term assets for increasing the revenue of firm is called as ?capital budgeting‘. It is a decision to invest funds in long-term activities for future benefits to increase the wealth of the firm, hence that of the owners. Capital budget in grefersto long-term planning for proposed capital outlays and their financing. The future growth of a firm depends on capital expenditure decisions. Capital budgeting involves large amount of funds, risk and uncertainty and they are of an irreversible nature. Estimation of cash flow is very important for evaluating the investment proposals. Capital budgeting results the exchange of current fund for future benefits which will occur over a series of years to come. The important techniques used in capital investment appraisal are as follows:

- Payback period method
- Accounting rate of return method
- Net present value method
- Internal rate of return method
- Profitability index method
- Discounted payback period method etc.

Working Capital Management - Techniques like economic order quantity, ABC analysis, fixation of inventory levels, cash management models etc are adopted in the efficient working capital management.

Capital Structure - The finance manager has to decide an optimum capital structure to maximize the wealth of shareholders. In capital structure decisions - analysis of operating and financial leverages, cost of different components of capital, EPS - EBIT analysis, ascertainment of EPS and different financing alternatives, determination of financial breakeven point, indifference point analysis and other mathematical models are used.

Check your progress 15

1. Investment in long-term as sets for increasing the revenue of firm is called as ?
   a. capital ratio
   b. capital structure
   c. capital budgeting
2. Capital budget in grefersto ..... term planning for proposed capital outlays and their financing.
   a. short
   b. long
3. The finance manager has to decide an ..... capital structure to maximize the wealth of shareholders.
   a. minimum
   b. optimum

1.17 Let Us Sum Up

In this unit we discussed the scope of financial management. In this unit unit we came across several important topics of financial management.

In this unit we studied the important concept of wealth and revenue maximization has been also explained that the wealth maximization and not profit maximization should be the objective of finance managers. Financial management is all about how a company obtains the fund and how it utilizes in today‘s world. Scope of the financial management is wide - from the forecasting the funds to the decision making in investment and finance areas. We even came across the finance manager‘s role and found that it is not restricted to fund mobilization and deployment of funds but he works beyond that and plays a crucial role in strategy formulation, helping the top management in decision making process, helping other departments like accounting, credit, cash, data processing and tax and informing them about the day to day activities. We have even studied the techniques of financial management like Trend Ratios, Cash flow Analysis, Funds Flow Analysis, Ratio Analysis, Capital Budgeting Techniques Payback period method, Accounting rate of return method, Net present value method, Internal rate of return method, Profitability index method, Discounted payback period method, Working Capital Management, Capital Structure.

So at the end of this unit the readers would have got sufficient introduction to the subject and gained a lot about the unit.

1.18 Answers for Check Your Progress

Check your progress 1

Answers:(1-b)

Check your progress 2

Answers:(1-b)

Check your progress 3

Answers:(1-c)

Check your progress 4

Answers: (1-b), (2-b), (3-a), (4-a)

Check your progress 5

Answers: (1-a), (2-b), (3-b), (4-a), (5-b)

Check your progress 6

Answers: (1-b), (2-a), (3-a), (4-b)

Check your progress 7

Answers: (1-c), (2-a), (3-b)

Check your progress 8

Answers: (1-c), (2-a), (3-b), (4-b), (5-a)

Check your progress 9

Answers: (1-d)

Check your progress 10

Answers: (1-d), (2-c)

Check your progress 11

Answers: (1-b), (2-b), (3-a) (4-d)

Check your progress 12

Answers: (1-c)

Check your progress 13

Answers: (1-a) (2-b) (3-a)

Check your progress 14

Answers: (1-b), (2-a), (3-b)

Check your progress 15

Answers: (1-c) (2-b) (3-b)

1.19 Glossary

1. **Account Receivable -** A balance due from a customer.
2. **Accounting Profit -** A firm's net income as reported on its income statement.
3. **Accruals -** Continually recurring short-term liabilities especially accrued wages and accrued taxes.
4. **Annual Report -** A report issued annually by a corporation to its stockholders. It contains basic financial statements, as well as management's opinion of the past year's operations and the firm's future prospects.

1.20 Assignment

Why is financial management more significant for corporate entities than partnership firms?

1.21 Activities

Why is integration of finance, investment and dividend functions necessary ?

1.22 Case Study

Visit any company in your area and discuss the functions of a finance manager.

1.23 Further Readings

1. Fundamentals of financial management- Dr. Prasanna Chandra.
2. Financial management -Dr. Mahesh Kukris.
3. Financial management -Prof. A. R. Rao.

Unit 2

SOURCES OF LONG-TERM FINANCE

: UNIT STRUCTURE :

2.0 Learning Objectives

After learning this unit, you will be able to understand:

- The Need for Long-term Finance.
- The Important Sources and types of Long Term Finance.
- The Features of Equity Capital and Preference Capital, Debenture Capital, Term Loans, Convertible Debentures and Warrants.
- Differentiate between all the sources of capital.
- Discuss Risk return ratio of the different sources.

2.1 Introduction

India is geared up to achieve 8% growth rate p.a. Any economy needs finance to grow as finance is called Life Blood of the businesses. Companies need finance mainly for two reasons – To meet the long-term requirements and for meeting the day to day requirements i.e. working capital requirements.

The long term decisions of the company include setting up the business,

diversification, modernization, expansion and such capital expenditure decisions. These decisions are for the long term and it takes a long gestation period to see the benefits. Since these decisions involve enormous investment and are irrevocable in nature, long-term funds are best for them. In this, Asset-Liability management plays a paramount role. Companies should be prudent in meeting the long-term requirements by the long-term sources of funds instead of short-term sources of funds. If this is done otherwise, meeting the long-term requirement by the short- term sources then there would be a mismatch and this would lead to interest rate risk and interest burden and the company will have to face liquidity risk eventually.

2.2 Types of Capital

Companies can issue three types of capital – Equity, Preference and Debenture (Loan) capital. These sources distinguish amongst themselves on the risk, return and ownership pattern.

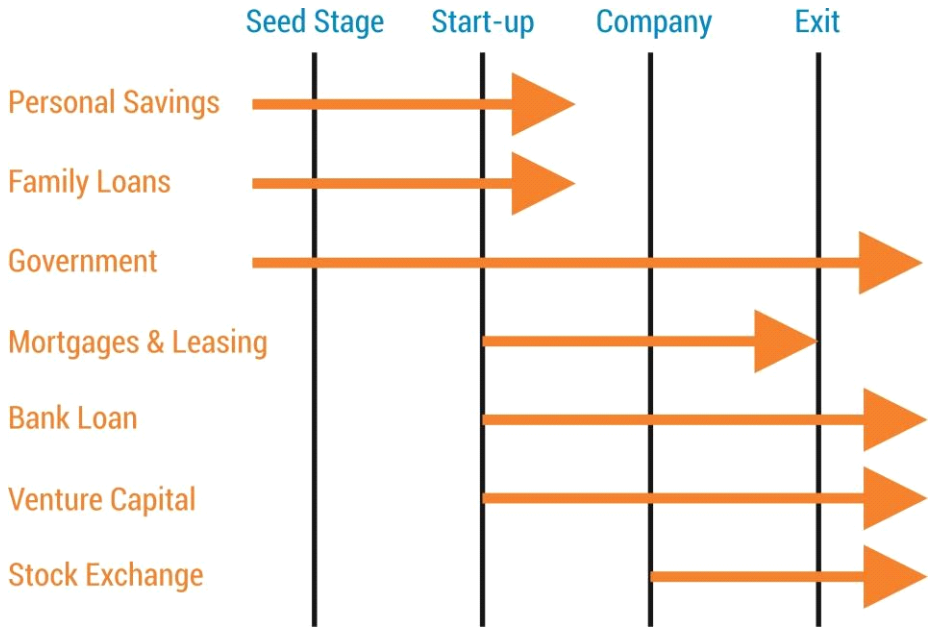


Fig 2.1 Types of Capital

2.2.1 Equity Capital

Equity shareholders are the owners of the company. After paying a part of profit to the preference shareholders and other creditors of the company, they enjoy the residual profits of the company. Their liability is limited to the amount of share capital they contribute to the company. The benefit of equity capital to the issuing company is that without any fixed commitment for the payment of dividends, it offers lifetime capital with limited liability for repayment. Considering the cost of capital, the cost of equity capital is higher than any other form of capital as–

- The equity dividends are not tax deductible expenses.
- The high cost of issue.
- The equity shareholders enjoy voting rights, so excess of equity capital in the company‘s capital structure leads to dilution of effective control.

2.2.2 Preference Capital

Preference shares combine the attributes of equity shares and debentures. Like in the case of equity shareholders, there is no mandatory payment to the preference shareholders and the preference dividend is not tax deductible

(unlike in the case of the debenture holders, wherein interest payment is mandatory). The preference shareholders earn a fixed rate of return for their dividend payment similar to the debenture holders. In addition to this, the preference shareholders have preference over equity shareholders to the post-tax earnings in the form of dividends and assets in the event of liquidation. Preference shareholders generally do not have any voting rights. They may be entitled to conditional voting rights.

Most preference shares in India carry a cumulative dividend feature, requiring that all past unpaid preference dividends be paid before any ordinary dividends are paid. In India, both redeemable and perpetual preference shares can be issued. Perpetual or irredeemable preference shares do not have a maturity date. Redeemable preference shares have a specified maturity. In India, redeemable preference shares are not often retired in accordance with the stipulation since there are no serious penalties for violation of redemption feature. The call feature permits the company to buy back preference shares at a predetermined buy back or call price. Call price may be higher than the par value. Normally, it decreases with the passage of time. The difference between call price and par value of the preference share is called call premium.

Preference shares may or may not be convertible. A convertible preference share permits preference shareholders to convert their preference shares, fully or partly, into ordinary shares at a specified price during a given period of time.

Preference shares allow more flexibility and fewer burdens to a company. The dividend rate is less than that of equity shares and it is fixed. In addition, the company can redeem it when it does not require the capital. Normally, when a company reconstructs its capital, it may convert preference capital into equity capital. Occasionally, equity capital may be converted into preference capital. For example, IDBI in 1994 proposed to convert its equity capital as preference capital.

2.2.3 Debenture Capital

A debenture is a marketable legal contract whereby the company promises to pay its owner, a specified rate of interest for a defined period of time and to repay the principal at the specific date of maturity. A debenture is a long term promissorynoteforraisingloancapital.Thefirmpromisestopayinterestand principal as stipulated. The owners of debentures are called debenture holders. An alternative form of debenture in India is Bond. Bonds are issued primarily by public sector companies in India.

Debentures are usually secured by a charge on the immovable properties of the company. If the company issues debentures with a maturity period of more than eighteen months, then it has to create a Debenture Redemption Reserve (DRR), which should be at least half of the issue amount before the redemption commences. The company can also attach call and put options. With the call option, the company can redeem the debentures at a certain price before the maturity date and similarly, the put option allows the debenture holder to surrender the debentures at a certain price before the maturity period.

The interest rate on a debenture is fixed and known. It indicates the percentage of the par value of the debenture that will be paid out annually or semi-

annually or quarterly in the form of interest. Thus, irrespective of whatever might be the market price of the debenture, say, with a 12% interest rate, and a Rs. 1000 par value, it will pay out Rs. 120 annually in the form of interest until maturity. Paying the interest is legally binding on a company. Debenture interest is tax deductible for computing the company‘s corporate tax.

Debentures are issued for a specific period of time. In India, a debenture is generally redeemed after seven to ten years in instalments.

The yield on a debenture is related to its market price; therefore, it could be different from the coupon rate of interest. Two types of yield could be distinguished. The current yield on a debenture is the ratio of the annual interest payment to the debenture‘s market price. For example, the current yield of a 12% Rs. 1000 debenture currently selling at Rs. 800 is -

Current Yield = Annual Interest / Market Price

= 120 / 800

= 0.15 or 15%

The yield to maturity considers the payments of interest and principal over the life of the debenture. So, it is the internal rate of return of the debenture. The yield to maturity is the discount rate that equates the present value of the interest and principal payments with the current market price of the debentures.

In liquidation, the debenture holders have a claim on assets prior to that of share holders. However, secure debenture holders have priority over the unsecured debenture holders

Types of Debentures

Debentures can be classified based on the conversion and security. A few types of debentures are discussed below:

- Non-Convertible Debentures (NCDs)
- Fully-Convertible Debentures (FCDs)
- Partly-Convertible Debentures (PCDs)

Non-Convertible Debentures (NCDs)

NCDs are pure debentures without a feature of conversion. They is not repayable on maturity. The investor is entitled for interest and repayment of principal.

For example, ICICI offered for public subscription unsecured redeemable debentures of Rs. 1000 each. These bonds are fully non-convertible and so, here, the investor is not given the option of converting it into equity. Interest on the ICICI debentures will be paid half yearly on June 30 and December 31 each year. The company plans to redeem these debentures at par on the expiry of five years from the date of allotment that means the maturity period is five years. However, ICICI has also allowed its investors the option of requesting the company to redeem all or part of the bonds held by them on the expiry of three years from the date of allotment, provided the debenture holders give the prescribed notice to the company.

Fully-Convertible Debentures (FCDs)

FCDs are converted into shares as per the terms of the issue with regard to price and time of conversion. These debentures can be converted into equity

shares after a specified period of time at one stroke or in installments. In the case of a fully established company with an established reputation and good stable market price, FCDs are very attractive to the investors as their debentures are getting automatically converted to shares which may at the time of conversion be quoted much higher in the market compared to what the debenture holders paid at the time of FCD issue. Nowadays, companies in India are issuing FCDs with zero rate of interest.

Partly-Convertible Debentures (PCDs)

These debentures issued by companies in India have two parts: a convertible part and a non-convertible part. Such debentures are known as partly convertible debentures. The investor has the advantage of both convertible and non-convertible debentures combined into one debenture. For example, Proctor and Gamble Ltd (P and G) issued 4, 00,960 PCDs of Rs. 200 each to its existing shareholders in July 1991. Each PCCD has two parts: convertible portion of Rs. 65 each to be converted into one equity share of Rs.10 each at a premium of Rs. 55 per share at the end of 18 months from the date of allotment and non- convertible portion of Rs.135 payable in three equal installments on the expiry of 6th, 7th and 8th years from the date of allotment.

Advantages of Debentures

- Is a cheaper source of finance because, investors consider debentures as a less risky investment and therefore require a lower rate of return and interest payments are tax deductible.
- Since debenture holders do not carry voting rights, debenture issue does not cause dilution of ownership.
- Debenture holders do not have share in extra ordinary earnings of the company. So the payments are limited to interest.
- In the periods of high inflation, debenture issue benefits the company. Its commitment of paying interest and principal which are fixed decline in real terms.

Disadvantages of Debentures

- Debentures carry legal obligation of interest and principal payment, which, if not paid, can force the company into liquidation.
- In the case of companies which have fluctuating sales and earnings, debentures prove to be disadvantageous due to increased financial leverage.
- At the time of maturity, debenture involves substantial cash outflows.

2.2.4 Term Loans

Apart from Debentures or Bonds, Term Loans is another major source of debt finance. Term loans are sources of long term debt and are obtained from banks and financial institutes like IDBI, ICICI etc. As term loans are obtained for financing large projects, this method of financing is also called project financing.

Term Loans have a maturity of more than one year but less than ten years. Term loans provided by FIs generally have maturity of 6 to 10 years while the ones provided by banks have maturity of around 3 to 5 years.

Term loans are negotiated by a firm directly with a bank or FI, thereby making term loans a private placement unlike debentures that are placed for pub-

lic subscription. This gives term loans the advantage of low loan raising cost as well as ease of negotiation. Also, as term loans need not be underwritten, they also avoid commission and other related costs.

Security is always guaranteed in case of term loans. Primary Security secures the term loans specifically by using the assets obtained from term loan funds. Secondary or Collateral Security is used to secure the term loans generally by using the company‘s current or future assets. Fixed or Floating charge can be created against the firm’s assets.

In case of fixed charge, the firm needs to pay stamp duty of around 10.5% of the loan amount while for floating charge; it needs to pay stamp duty of only 0.5%.

Other than asset security, the FIs impose a number of restrictive covenants on the borrowing firms. Some of these covenants include ensuring that the firm maintains its minimum asset base by maintaining minimum capital position in terms of minimum current ratio. The firm may also be required to reduce its debt- equity ratio by issuing additional equity and preference capital. The lender can also restrain the borrowing company from incurring additional debt or even repaying existing loan. The cash outflows of the firm may also be restricted by restricting dividends or any other capital expenditure. Term loans have a provision for appointing nominee director by FIs. The role of this nominee director is to safeguard the interests of the FIs without causing any interference.

FIs provide heavy loan assistance to the companies due to which the financial stake of these institutions is substantial. As a result, these FIs had an option of converting the part of rupee loan into equity, the terms and conditions of which are decide by FIs themselves.

The schedule for paying the interest and principal is called the repayment schedule or loan amortization. Interest charges are tax deductible. In India, the general rate of interest on term loans is above 14-15 percent. However, loans at concessional interest rates are also available for projects in backward areas. In India, amortization is executed by repayment of principal in equal installments and paying the interest on the outstanding (unpaid) loan. This result in the decline of interest payments over the years and also, the total loan payment will not be the same for each period. Repaying the loans in installments saves the company from paying huge amounts at the end of the maturity. Such payments are termed as balloon payments.

For example, let‘s say an airline company has taken a term loan of Rs. 5 cores for a period of 9 years from a FI. The interest rate charged will be 15% p.a. on the outstanding balance. That means, the principal shall be repaid in nine equal year-end installments. Now, the payment schedule will include both, the interest as well as the principal payment. The interest calculation will be on the outstanding loan amount. As the amount was borrowed at the beginning of the first year, the interest at the end of the year will be

0.15 X 2, 00, 00,000 = 30,00,000

The instalments on the principal will be

2,00,00,000 / 9 = 22, 22,222.22

Thus, at the end of first year, the loan balance will be

2, 00, 00,000 - 22, 22,222.22 = 1, 77, 77,777.78

This balance will be used to calculate the interest rate for next year.

2.2.5 Convertibles

A debenture that can be changed into a specified number of ordinary shares at the option of the owner is known as a convertible debenture. As a result, this debenture not only promises the investor a fixed income associated with it, but also the capital gains associated with the equity share once the owner has exercised its conversion option. Due to this combination of capital gains and fixed income, convertibles are also called as a hybrid security.

Whenever a company issues convertibles, it specifies the terms of conversion like the number of equity shares in return of the convertible debenture, the price of conversion and also the place and time of conversion option execution.

The number of equity shares that an investor can receive on exchange of his convertible debenture is called conversion ratio. Likewise, the price paid for the equity share at the time of conversion is the conversion price. The conversion ratio can be found out easily if the par value of the convertible security and its conversion price is known–

Conversion Ratio = Par value of convertible debenture / Conversion Price

In India, generally both, the conversion ratio and the conversion price are specified by the companies. The ways in which the conversion price is set in developedcapitalmarketslikethatofUSAandinadevelopingmarketlikeIndia is different. In India, the conversion price is set much below the share‘s market price prevailing at the time of issue whereas in USA, it is set much above the share‘s prevailing market price.

The buyers of convertibles are safeguarded against the dilution arising due to share split or bonus share issue.

The valuation of convertible debentures combines both fixed income securities as well as ordinary shares. This makes the valuation of convertible debentures more complex than that of non-convertible securities. Thus, the market value of the convertible debenture depends on market price of a share, conversion value and also the value of non-convertible or straight debenture known as investment value.

The conversion value of a convertible debenture is the product of conversion ratio and the market price of the ordinary share. i.e.

Conversion Value = Conversion Ratio X Share Price

For example, the conversion ratio for the convertible debenture of a company is 2 and the market price of its share is Rs. 150, then

Conversion value = 2 X 150

= Rs. 300

The non-convertible debenture (NCD) is also known as a straight debenture. The value of NCD is the value of convertible debenture without the feature of conversion. This value of the convertible is known as the investment value or the security value. It is equal to the sum of the present value of future interest payments and principal redemption at the required rate of return.

Need for issuing convertible debentures

- The main idea of issuing convertible debenture is to make the issue attractive so that it is fully subscribed. Generally, fixed interest convertible debentures are preferred over non-convertible because it entitles to earn a definite, fixed income with the chance of making capital gains. So the convertibility feature becomes attractive.
- When the company issues a convertible debenture, the company is effectively selling ordinary shares in future. This is done when the company considers the current market price of its share to be low, but wants to issue shares at a higher price. It is done by setting the conversion price higher than the ordinary share‘s prevailing market price.
- The company issues convertible debenture as a deferred equity financing to avoid immediate dilution of the earnings per share. For this, the company uses fixed income security and does not increase the number of issued shares until its investment starts paying off.
- The company may issue convertible debentures over equity financing since it is a cheaper source of finance. The company can use such funds to finance a large expansion, modernization or diversification project. By doing so, the convertible debenture holders, who initially provided cheap funds to the company can now convert their debentures into ordinary shares and participate in the prosperity of the company.

2.2.6 Warrants

A warrant allows the purchaser to buy a fixed number of ordinary shares at a particular price during a specified period. Warrants are issued along with debentures as ?sweeteners‘. Nowadays warrants are issued by big, profitable companies as a part of a major financing package. Warrants can be used along with ordinary or preference shares, to improve the marketability of the issue.

The exercise price of a warrant is the price at which its holder can buy the issuing firm‘s ordinary shares. The exercise ratio is the number of ordinary shares that can be bought at the exercise price per warrant. This concept is like the conversion ratio in case of the convertible securities. If the exercise ratio is 1:1, that means the holder of warrants is allowed to buy one ordinary share in exchange for one warrant at the exercise price.

The expiration date is the date when the option to purchase ordinary shares in exchange for warrants expires. Normally, the life of warrants is between 5 and 10 years. However, some warrants are perpetual-they do not have any expiration date.

A warrant can either be detachable or non-detachable. When the warrant is sold separately from the debenture or preference share to which it was originally attached, it is called a detachable warrant. A non-detachable warrant cannot be sold separately from the debenture to which it was originally attached.

Warrants entitle to buy ordinary shares. So, the holders of warrants are the shareholders of the company until they exercise their options. As a result, they do not enjoy right to vote or receive dividends. They become the company‘s ordinary shareholders, once they exercise their warrants and purchase ordinary shares.

2.2.7 Leasing

Leasing method of long term source of finance has become very common among the manufacturing companies. Leasing facility is usually provided through the mediation of leasing companies who buy the required plant and machinery from its manufacturer and lease it to the company that needs it for a specified period on payment of an annual rent. For this purpose a proper lease agreement is made between the lesser (leasing company) and lessee (the company hiring the asset). Such agreement usually provides for the purchase of the machinery by the lessee at the end of the lease period at a mutually agreed and specified price. It may be noted that the ownership remains with the leasing company during the lease period. Sometimes, a company, to meet its financial requirements, may sell its own existing fixed asset (machinery or building) to a leasing company at the current market price on the condition that the leasing company shall lease the asset back to selling company for a specified period. Such an arrangement is known as ?Sell and Lease Back‘. The company in such arrangement gets the funds without having to part with the possession of the asset involved which it continues to use on payment of annual rent for the lease. It may be noted that in any type of leasing agreement, the lease rent includes an element of interest besides the expenses and profits of the leasing company. In fact, the leasing company must earn a reasonable return on its investment in lease asset. The leasing business in India started, in seventies when the first leasing company of India was promoted by Chitambaram Group in 1973 in Chennai. The Twentieth Century Finance Company and four other finance companies joined the fray during eighties. Now their number is very large and leasing has emerged as an important source. It is very helpful for the small and medium sized undertakings, which have limited financial resources.

2.2.8 Hire Purchase

Hire purchase is a form of instalment credit. Hire purchase is similar to leasing, with the exception that ownership of the goods passes to the hire purchase customer on payment of the final credit instalment, whereas a lessee never becomes the owner of the goods.

Hire purchase agreements usually involve a finance house.

i) The supplier sells the goods to the finance house.

ii) The supplier delivers the goods to the customer who wills eventually purchase them.

iii) Sources of Long-Term Finance

The hire purchase arrangement exists between the finance house and the customer.

The finance house will always insist that the hirer should pay a deposit towards the purchase price. The size of the deposit will depend on the finance company’s policy and its assessment of the hirer. This is in contrast to a finance lease, where the lessee might not be required to make any large initial payment.

An industrial or commercial business can use hire purchase as a source of finance. With industrial hire purchase, a business customer obtains hire purchase finance from a finance house in order to purchase the fixed asset. Goods bought by businesses on hire purchase include company vehicles, plant and machinery, office equipment and farming machinery.

2.2.9 Initial Public Offer

When a company reaches a certain stage in its growth, it may decide to issue stock, or go public, with an initial public offering (IPO). The goal may be to raise capital, to provide liquidity for the existing shareholders, or a number of other reasons.

Any company planning an IPO must follow rules and regulation of SEBI and stock exchanges.

In most cases, the company works with an investment bank, which underwrites the offering. That means marketing the shares being offered to the public at a se t price with the expectation of making a profit.

2.2.10 Rights Issues

The following definition have been provided by the Chartered Institute for Management Accountants (CIMA): A Rights issue is the raising of new capital by giving existing shareholders the right to subscribe to new shares and debentures in proportion to their current holdings. These shares are usually issued at a discount to the market price. A shareholder not wishing to take up a rights issue may sell the rights.

The advantages to rights issues are as follows:

- Rights issues are cheaper than offers for sale to the general public.
- This is partly because no prospectus is required but also because the administration is simp lerand the under writing costs are less. An offer for sale is a means of selling share to the public at large based on information held in a prospectus. Underwriters are financial institutions which agree (in exchange for a fee) to buy any unsubscribed shares at the issue price.
- Rights issues are more beneficial to existing shareholders than issues to the general public. New shares issued at a discount to the market price to make them more attractive to investors.
- Relative voting rights are unchanged as long as all the investors take up their rights.
- The finance raised may be used to reduce gearing by paying off long term debt.

2.2.11 Private Placement

Definition:

The sale of securities to a relatively small number of select investors as a way of raising capital. Investors involved in private placements are usually large banks, mutual funds, insurance companies and pension funds. Private placement is the opposite of a public issue, in which securities are made available for sale on the open market.

Since a private placement is offered to a few, select individuals, the placement does not have to be registered with the Securities and Exchange Commission. In many cases, detailed financial information is not disclosed and a need for a prospectus is waived. Finally, since the placements are private rather than public, the average investor is only made aware of the placement after it has occurred

Check your progress 1

1. ..... combine the attributes of equity shares and debentures
   a. bonds
   b. equity shares
   c. bonus shares
   d. Preference shares
2. A ..... is a marketable legal contract whereby the company promises to pay its owner, a specified rate of interest for a defined period of time.
   a. shares
   b. bond
   c. debenture
   d. equity
3. ..... are pure debentures without a feature of conversion.
   a. NCDs
   b. FCDs
4. ..... are converted into shares as per the terms of the issue with regard to price and time of conversion.
   a. NCDs
   b. FCDs
5. A ..... that can be changed into a specified number of ordinary shares at the option of the owner is known as a convertible debenture.
   a. bonds
   b. share
   c. debenture

2.3 Let Us Sum Up

In this unit we studied the importance of finance in business and about the various sources exposed to a business through which funds could be arranged.

We studied in this unit that finance is the life blood of a company. Companies need finance mainly for two reasons - To meet the long-term requirements and for meeting the day to day requirements i.e. working capital requirements. We even studied about the various sources of finance. We studied that the long term decisions of the company comprise of setting up the business, diversification, modernization, expansion and such capital expenditure decisions. These decisions are for the long term and it takes a long development period to see the benefits. We have seen two projects in this chapter which shows the different sources of financing for the long-term investments in the company. There are different sources of long-term financing. They are - Issue of Securities, Term Loans, Internal Accruals, Suppliers credit schemes, Equipment financing. Equity shareholders are the owners of the company. After paying the part of profit to the preference shareholders and other creditors of the company, they enjoy the remaining profits of the company. The preference shareholders earn a fixed rate of return for their dividend pay-

ment similar to the debenture holders. In addition to this, the preference shareholders have preference over equity shareholders to the post-tax earnings in the form of dividends and assets in the event of liquidation. A debenture is a long term promissory note for raising loan capital. The firm guarantees to pay interest and principal as fixed. The owners of debentures are called debenture holders. There are three types of debentures - Non-Convertible debentures (NCDs), Fully-Convertible Debentures (FCDs) and Partly-Convertible Debentures (PCDs).

So after going through this unit the readers would have got the sufficient information about financial management and this unit and this would be of great help for them in understanding the basics concepts of financial management.

2.4 Answers for Check Your Progress

Check your progress 1

Answers: (1-d), (2-c), (3-a), (4-b), (5-c)

2.5 Glossary

1. Convertible Currency - A currency that may be readily exchanged for other currencies.
2. Convertible Security - A security, usually a bond or preferred stock, that is exchangeable at the option of the holder for the common stock of the issuing firm.
3. Debenture - A long-term bond that is not secured by a mortgage on specific property.

2.6 Assignment

State the different sources of long-term finance in India and explain their features.

2.7 Activities

Differentiate between Equity capital and preference capital.

2.8 Case Study

Study the projects of Jet Airways and Kingfisher airlines and state your observations about the sources of finance they have used.

2.9 Further Readings

1. Financial management-ICFAI.
2. Financial management - I. M. Pandey.
3. Financial management - G. Sadarsan Reddy.

Unit 3

SOURCES OF SHORT TERM FINANCE

: UNIT STRUCTURE :

3.0 Learning Objectives

After learning this unit, you will be to understand:-

- The need of short term of Finance.
- Short term sources of Finance.
- Importance and utility of each source of finance
- Special features of each source of finance.
- Difference among these sources of finance.

3.1 Introduction

From the view point of time

There are two types of sources of finance

(i) Long term sources of finance

(ii) Short term sources of finance

Both sources of finance have their specific role. A long term source of finance has relation with capital budgeting decision. On the other hand short term sources of finance have relation with working capital management. Long

term sources of finance are used for long term investment, like investment in plant, machineries, equipments, land, building etc. The purpose of long term sources of finance and long term investments are different then short term sources of finance and their investment in short term assets.

Short term sources are those type of sources of finance whose duration of use is less than one year.

Objectives and features of short term sources of finance are as follows:-

(i) To maintain the liquidity of the enterprise.

(ii) To meet day to day requirement of routine business transactions.

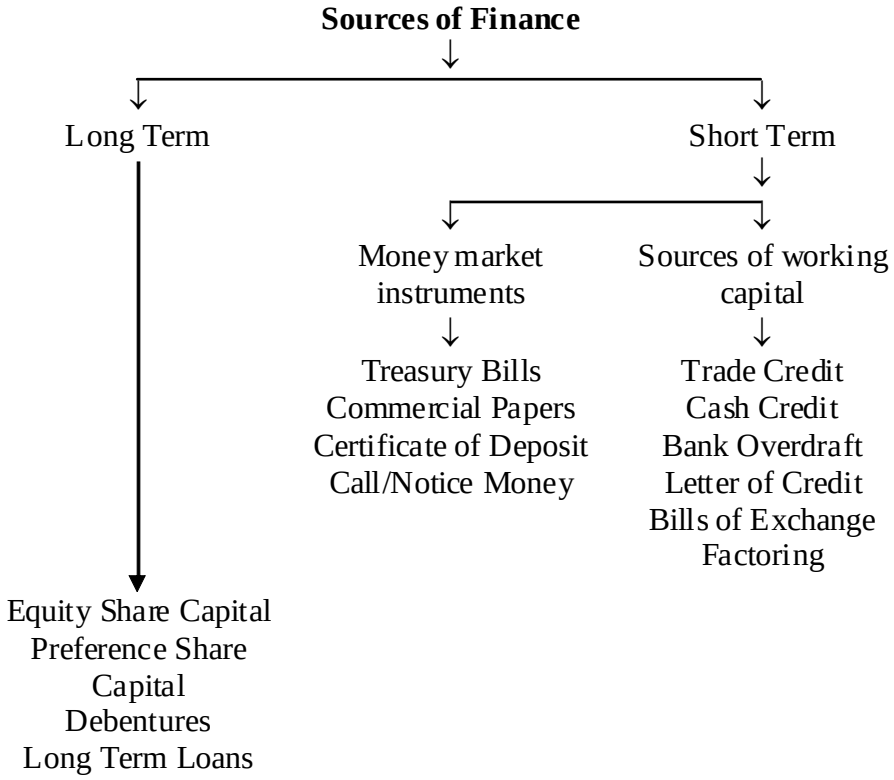
(iii) The maturity period is less than one year

(iv) Different types of sources of finance are available

(v) This indicates short term solvency status of the enterprise.

3.2 Sources of finance

The use of short term sources of finance is not confirmed to the manufacturing and service sectors. But short term sources of finance are used by government and banks also. For government short term source of finance is treasury bills of 91 days, 182 days and 364 days while for banks short term source of finance is certificate of deposit. For business organization these sources are creditors of goods and expenses, bills payable, bank overdraft, cash credit, trade deposits, short term loan, bills discounting, factoring etc. This unit deals with short term sources of finance of manufacturing and service enterprises. All these sources are explained in the context of working capital management.



3.2.1 Trade Credit

This source of finance is very conventional and popular in the business world. This trade credit is based on norms of industry and business relationship be-

tween business enterprise and supplier. It is a facility whereby business enterprise are allowed by the suppliers of raw materials, services, components and parts etc. to defer the immediate payment to a definite future period, generally which is less than one year. Any purchase of raw materials and services obtained without immediate payment to the suppliers is known as trade credit and is shown balance sheet as creditors under the head of current liabilities.

Another form to obtain materials and service on credit is acceptance of bills. Here, supplier writes bills (called bills receivable) in the name of receiver (called bills payables). It is short term liability for the receiver of goods or/ and services. These bills can be discounted by the suppliers with banks and subsequently payment is paid by receiver to the bank.

These bills are known as Bills of exchange. A bill of exchange is negotiable instrument. A supplier of goods or / and services is known as writer (the holder) while receiver is known as drawee of the bill. A bill of exchange is transferable instrument.

Terms in Trade Credit: There are certain terms are used for trade credit. These terms are as follows:

(i) Maximum Credit Limit:- Here, supplier determines maximum credit limit to be given to the customers. This credit limit in terms of rupees is based on two factors (a) standards of industry and (b) relation with customer.

(ii) Credit Period: It is the period of time for which trade credit is made available to the enterprise by the supplier.

(iii) Starting Date: - This is also important term credit period and discount period are based on this term.

(iv) Cash Discount: - This is one kind of incentive given by the supplier to customer to make payment before maturity date. It is one type of discount or reduction in debt.

Merits of Trade Credit

The trade credit as a source of financing has the following advantages:-

(i) Trade Credit is readily available according to the prevailing norms.

(ii) Trade Credit is a flexible source of finance, which can be easily adjusted to the changing needs for purchases.

(iii) Trade Creditors generally adjust the time of payment keeping in mind past transactions with the customers.

(iv) Generally trade credit does not involve any flotation costs.

Trade Credit is used to obtained goods on credit for certain period of time. Thus, it is also one of the sources of finance.

3.2.2 Cash Credit

This facility is provided by the banker to their account holders generally customer. Under this facility customers are allowed to withdraw money from their bank account more than their existing balance. The excess withdrawal amount is predetermined by the banker. This amount varies customer to customer. Cash credit facility is known as short term loan. In case of this source of finance interest is charged on the amount of borrowing and not on borrowing limit. This service is provided by the banker on continues basis.

Features of Cash Credit:

(i) Borrowing Limit: - It is limit based short term loan provided by the bankers. This limit is determined on credit worthiness of the borrower. A company can withdraw funds up to its established borrowing limit.

(ii) Interest on borrowed amount: - In contrast with other traditional debt financing methods such as loans, the interest charged is only on amount borrowed of the cash credit account and not on the total borrowing limit.

(iii) Minimum Commitment Charge: - The short term loan comes with minimum charges for establishing the loan account regardless of whether the borrower utilizes the available credit.

(iv) Collateral Security: - Cash credit is often secured using stocks, fixed assets or property as collateral.

(v) Credit Period: - Cash credit is typically given for a maximum period of 12 months, after which the drawing power is re-evaluated.

3.2.3 Bank Overdraft

It is a short – term borrowings facility made available to the companies in case of urgent need of funds. The bank will impose limits on the amount they can lend. When the borrowed funds are no longer required they can quickly and easily be repaid. The banks issue overdrafts with a right to cash them in at short notice.

Features:-

- To avail overdraft account facility bank account with respective bank is mandatory.
- The money extension is granted on the basis of customer's account value, repayment history or credit score.
- It is short – term credit provided by the banks that needs to be paid within the stipulated time period.
- Credit amount or overdraft attracts interest for the time of use which can be from one day to weeks or months.

3.2.4 Letter of Credit

It is also one time short term credit guarantee issued by the bank for its customer. A letter of Credit (LC) is a financial document that facilitates international as well as domestic trade. It is an arrangement by the issuing bank, on instruction of customer or on its own behalf, undertakes to pay or accept or negotiate or authorized another bank to do so against stipulated documents subject to compliance with specified terms and conditions. The documentary credit is considered as the best payment arrangement since a reputed bank who pays against the presentation of stipulated documents as mentioned in the letter of credit.

Features:-

Letter of Credit is very traditional and short term source of finance. There are certain characteristics of it

(i) Negotiability: - The LC is usually considered as a negotiable instrument can be passed freely.

(ii) Revocability: - The LC can be either revocable or irrevocable.

(iii) Transferable: - The beneficiary of LC can be transferred.

(iv) Sight and Time based: - A sight form is pad when the LC is presented and the time form is paid after certain duration of time.

Parties to Letter of Credit: - There are three parties.

(i) Applicant (importer / purchaser) requests the bank to issue the Letter of Credit.

(ii) Issuing bank (importer's / purchaser's bank) which issues the Letter of Credit known as the opening banker of Letter of Credit.

(iii) Beneficiary (exporter / seller) of goods/ services.

Advantage of Letter of Credit

(i) It is useful to expand business internationally with safety

(ii) It is highly customizable

(iii) Seller receives money on fulfilling terms.

(iv) It works as a credit certificate for buyer

(v) Seller is free from any kind of risk on recovery of receivables

(vi) It is very quick to execute the credit worthy parties

(vii) Payment is assured in disputable transactions

3.2.5 Factoring

Under this instrument trade debt of firm is purchased by financial institution at a discount. Factoring is a regular arrangement between bankers and client. Here banker is known as factor.

Factoring is a financial service which involves meaning, financing and calculating receivables. A factor makes the conversion or receivables into cash possible. Factoring may be defined as a contract between the suppliers of goods/services.

The core part or component of factoring is purchase of book debts or receivables. The client (supplier) submit invoice arising from contracts of sale of goods to the factor. The factor performs at least two of the following services

(i) Financing for the seller, by way of advance payments.

(ii) Maintenance of accounts relating to the account receivables.

(iii) Collection of accounts receivables

(iv) Credit protection against default in payment by the buyer.

Factoring Commission:

The commission charge by the factor for providing factoring services is known as factoring commission. It is generally expressed as percentage of face value of receivables factored. In India it ranges between 2.5 to 3%.

Top Factoring Companies in India are

(i) IFCI Factors Ltd (ii) SBI Global and (iii) Canbank Factors Ltd, etc.

Parties to Factoring contract

There are three parties in factoring contract

(i) Buyer:- Buyer of goods who has to pay for goods purchased on credit

(ii) Seller: Seller of goods who has to realize for goods sold on credit

(iii) Factor: Factor who acts as an agent in realizing credit sales from buyer and passes on the realized sum to seller after deducting his commission.

Benefits:

(i) Firm can sale good quantum of goods on credit.

(ii) Flexible cash flow is available to the firm.

(iii) No collateral/security, therefore availability of finance is comparatively easier.

(iv) More attention can be given to the main business because factoring reduces the burden of collection.

(v) It is such an arrangement which reduces the incidence of bad debts.

(vi) Expansion of business can be done due to this facility.

3.2.6 Call/Notice Money

This source of finance is deals in overnight funds and deals in funds for 2 – 14 days.

The Narasimhan Committee (1998) recommended that call/notice money market in India should be made available purely an interbank market. Hence it is known as 'Inter Bank Call / Notice Money Market.

There are two important parties Borrowers and lenders.

According to RBI guidelines some parties can play dual role borrowers and lenders. In case of certain parties their role is confine to lending only.

(i) Borrowers and Lenders

a. All commercial Schedule Banks

b. Co-operative banks

c. Primary dealers listed by RBI

(ii) Only Lenders

a. Selected all Indian Financial Institutions

b. Selected Insurance Companies

c. Selected Mutual Funds

Interest rate is determined by the concern parties. Borrower and lender are free to determine interest rate.

Why Banks borrow money through call /notice money?

There are two important and valid reasons.

(i) To maintain Cash Reserve Ratio (CRR)

(CRR is the basic tool in the economy which manages inflation and flow of money in the country. RBI control bank capacity of lending through CRR)

(ii) The basic function of banks is to accept deposit and to lend loan in different forms. When accepted deposits are less than lending amount in this case banks are in needs of short term funds and this needs are met through this source of finance.

It is useful to the banks when they have surplus funds. Banks can generate return on it. It is mandatory for banks to maintain statutory liquidity ratio in

case of any emergency this source can be used. It provides liquidity in the market and it is very safe shorter time investment opportunity.

3.2.7 Treasury Bills

There are three different entities which are using specific source of finance to meet their short term financial needs. These entities are banks, business enterprises and government.

The short term finance needs of government are met with the help of Treasury Bills. This is very crucial instrument for government.

These bills are issued by RBI on the behalf of government. These bills having duration of 91 days, 182 days and 364 days.

It is totally finance bills. These bills are not created through business transactions. It is very liquid instrument (source of finance). It gives certain return to investors. No endorsement can be done in these bills like bills of exchange. It is most safe investment opportunity.

There are two types of Treasury Bills

(a) General or Regular Bills: **-** These bills are issued by government for public and other investors to make short term investments.

(b) Adhoc Bills:- There is no tender or auction process for these kind of bills. Adhoc bills are purchased by RBI from government and issue currency note.

It is fully secured investment and having very liquidity. Best option for short term investment. Again it is very important instrument for SLR and CRR. Another important benefit is, it is very low cost instrument.

3.2.8 Commercial Papers (CPs)

In 1987 Vaghul Committee had recommended introduction of CPs, which was accepted by RBI in March 1989 and made it effective on 01-01-1998. The basic objective for introduction of this bill is to enable highly rated corporate borrowers to diversify their sources of short term borrowings and to provide an additional instrument to investors. Now primary dealers and financial institution are permitted to issue CPs. Guidelines for issue of CP are presently governed by various directives issued by RBI as amended from time to time.

Commercial Paper is a short tem issuance promissory note issued by a company in a private sector or public sector at such a discount / interest on face value as may be determined by the issuing company and negotiable by endorsement and delivery.

- CP is unsecured money market instrument issued in the form of promissory note.
- It can be issued by corporate, primary dealers and all Indian financial institutions.
- This instrument is issued at discount to face value as may be determined by the issuer.
- Investment in CP can be made by individuals, banking companies, other corporate bodies register or incorporated in India.
- It is short term debt for companies.
- Issues of CPs are required to obtain the credit rating certificate for

issuance of commercial papers either from CRISIL (Credit Rating Information Services of India Ltd) or ICRA (The Investment Information and Credit Rating Agency of India) or CARE (the Credit Analysis and Research Ltd) or such other agencies as may be specified by RBI from time to time.

- The maturity for CPs is between 7 days to 1 year from the date of issue.

  For CP Master Circular is issued by Reserve Bank of India (RBI), it is as follows "Master Circular guidelines for issue of Commercial Papers (July 1, 2015)".

This source has different advantages, which are as follows:-

- Based on predetermined norms of RBI, so it is trustworthy investment opportunity
- This instrument eliminates hurdles of liquidity of business enterprise.
- As and when the holder of CP needs to transfer it, can be transferred in favour of other person.
- It is open investment opportunity. Several parties are allowed to make investment in this instrument.
- It is such an instrument where companies can avail help from banks or merchant bankers, because they are considered as expert of this field.
- Credit rating certificate is mandatory for issuer, so due to this provision investors feel their investment is safe.

3.2.9 Certificate of Deposit (CDs)

Various factors affect expected outcome of financial system. For expected results in the financial system from time to time different financial instruments are introduced in the money market. All these instruments is having important role for economy development.

Certificate of deposit is receipt of funds deposited with banks which can be easily sold in money market. This is an investment in the form deposit where time period is fixed. This instrument increases mobility of bank deposits. This scheme was introduced in 1989. Banks accept two types of deposits.

(i) Ordinary Fixed Term: - Such deposits are not negotiable instrument and therefore cannot be transferred in favour of other person.

(ii) Certificate of Deposit: - It is negotiable instrument and therefore it can be transferred in favour of other person by endorsement or delivery. Under this scheme scheduled commercial banks can issue funds for fix term and it cannot be converted into cash before its maturity but if investor need cash, he can raise cash by endorsement or delivery. Certain norms are developed to implement this scheme and certain modifications are also made on the basis of uncertainties and recommendations. This instrument has special features which are as follows:

- Deposits are sources of raising funds for banks and financial institutions for fixed term.
- Payments are not made before maturity.
- It can be transferred by endorsement or delivery to other person, hence it is a negotiable instrument.
- Certain norms are developed for issuing deposits.

- Such deposits are issued only by scheduled commercial banks.

  For CD Master Circular is issued by Reserve Bank of India (RBI), it is as follows "Master Circular guidelines for issue of certificate of deposits dated July 1, 2013.

This source has different advantages, which are as follows:-

- It is considered to be safe investment instrument because it is issued by banks under the control of RBI.
- It is open for all types of investors. CD can be issued to individuals, corporation, companies (including banks and primary dealers), trusts, association, etc.
- Duration of this investment opportunity is from one day to one year, from the date of issue.
- It is transferrable instrument can be transferred by endorsement or delivery and consequently liquidity can be increased.
- There is no lock-in-period.
- It is safe payment of certificate.

There is remarkable role of CDs in the economic development of the nation. It is very safe financial instrument of money market for all concern investors.

3.2.10 Bills of Exchange

Bill of exchange is defined under section 5 of Negotiable Instrument Act, 1881.

Bill of exchange is a written negotiable instrument, that carries an unconditional order to pay a specific sum of money to a designated person or the holder of the instrument as directed in the instrument by the maker.

The bill of exchange is either payable on demand, or after a special fixed term.

Features:

(i) A bill of exchange an instrument in writing.

(ii) It is drawn and signed by the maker i.e. Drawer of the bill.

(iii) It is drawn on a specific person i.e. drawee, to pay the specified amount.

(iv) It contains unconditional order to a person i.e. drawee.

(v) To make an instrument of value the drawee must accept it.

(vi) The specified amount is payable to the person whose name is mentioned in the bill or to his order or to the holder.

(vii) It specifies the date by which amount should be paid.

(viii) Payment of the bill must be in the legal currency of the country.

(ix) It must be properly stamped.

Parties to bill of exchange: - Following are parties to bills of exchange

(i) Drawer: - The person who makes the bill, or who gives the order to pay a certain sum of money, is the drawer of bill (instrument).

(ii) Drawee: - The person who accepts the bill of exchange or who is directed to pay a certain amount is called drawee.

(iii) Payee: - The person receiving payment is called the payee, who can be a designated person or the drawer himself.

(iv) Endorser: - Endorser is the person who transfers rights of payment.

(v) Endorsee:- Endorsee is the person in whose favour the bill of exchange is endorsed by the drawer.

(vi) Bearer:- Bearer is the person in possession of the bearer bill of exchange.

Types of Bills of exchange:-

Bills of exchange consist trade transactions involving sale and purchase of goods. But this mechanism of the bills of exchange can also be of the use in raising finance.

Type of bill of exchange depends on its objective. There are two types of bills of exchange from the view point of trade transactions and finance transactions.

(i) Trade Bill: - Trade bill used for trade transaction. Here making and accepting of bills is based on trade transactions. (Purchase and sale of goods). This bill of exchange is drawn by the seller of the goods and is accepted by buyer.

(ii) Accommodation Bill: - Accommodation bill is used to meet financial needs of drawer and drawee. This bill is for mutual benefit without a trade transaction. It does not involve a sale or purchase of any goods or services. This bill carries an agreement between two parties for the purpose of to meet financial needs of each other.

1. e.g. Mr. Rajan sells goods worth ?10,000 to Mr. Karan on credit. But Mr. Rajan is in need of finance and he draws bill of ?10,000 on Karan and it is accepted by Karan.

   This is trade bill, because it is emerged from trade transaction between Rajan and Karan. So here Mr. Rajan is drawer and Mr. Karan is drawee.

2. e.g. Mr. Param and Mr. Praksah are in need of money. Here Param will draw bill on Prakash and another bill will be drawn by Prakash on Param. The value of bill is ?10,000 for each. Both can discount these bills with their banks and get money. On maturity both will pay to the bank. This is accommodation bill, because it is not emerged from trade transactions. It is emerged from personal financial needs.

Another Classification of bill of exchange

(i) Documentary bill

(ii) Demand bill

(iii) Usance bill

(iv) Inland bill

(v) Clean bill

(vi) Accommodation bill

(vii) Trade bill

(viii) Supply bill

(ix) Fictitious bill

(x) Hundis

Check Your Progress

1) Debentures are _____source of finance.
   (a) Long Term (b) Short Term
2) A Bill of Exchange
   (a) Is negotiable instrument (b) is not negotiable instrument
3) Cash credit is provided to the client by the _____.
   (a) Bank (b) Supplier
4) For Bank overdraft interest _____.
   (a) Is not payable (b) is payable
5) LC means _____
   (a) Letter of credit (b) Credit of letter
6) Collection of receivable is function of _____.
   (a) Letter of credit (b) Factoring
7) Treasury Bills are issued _____.
   (a) By central government of RBI.
   (b) By RBI for central government
8) Commercial paper is _____.
   (a) Not negotiable instrument
   (b) Negotiable instrument
9) Certificate of deposits are issued by _____.
   (a) Banks (b) Comapnies
10) Negotiable instrument Act is of _____.
   (a) 1991 (b) 1981

3.3 Let us sum up

In business organization capital is important element. The need of capital is categorized in to two categories (i) Long term capital and (ii) Short term capital. The sources of both the capital are separate from each other. The short term need of capital (fund) having duration of maximum 12 months. In fund requirement for the period of less than 12 months is considered as short term needs.

In Indian financial system financial markets are categorized into two categories (i) capital market which works for long term sources of finance and (ii) money market which works for short term sources of finance. The instruments of money market are call / notice money, treasury bills, commercial papers, certificate of deposit etc.

Another concept working capital management deals with short term finance which is required for day to day transactions. The sources of working capital are trade credit, cash credit, bank overdraft, letter of credit, factoring, and bills of exchange.

All these sources of short finance have their special features, advantages and limitations. All these instruments and source have relevance for different stake holders. Stake holders are funds providers and funds borrowers. The specific purpose is served by specific instrument / source for special stake holders.

3.4 Answers for check your progress

Check Your Progress

Answers: - (1-a), (2-a), (3-b), (4-b), (5-a), (6-b), (7-b), (8-b), (9-a), (10 – b)

3.5 Glossary

1. **Money Market Instruments:** These are those instruments which are issued by different parties to meet their short term financial needs i.e. for the period of less than 12 months. This market includes instruments like call/notice money, treasury bills, commercial papers, certificate of deposits etc.
2. **Sources of working capital:** These are those sources of finance which are required to meet day to day financial needs. The sources of working capital are trade credit, cash credit, bank overdraft, letter of credit, factoring, and bills of exchange.

3.6 Assignment

State different types of instrument of Money Market and Sources of Working capital.

3.7 Activities

(i) Differentiate between Money market instruments and sources of working capital.

(ii) Undertake study on different types of bill of exchange.

3.8 Case Study

Obtain the guidelines of RBI for any money market instrument and try to understand the legal provision of them.

3.9 Further Readings

1. Financial Management – P. C. Tulsian
   Bharat Tulsian
2. Financial Management – Ravi M. Kishore

Unit 4

TIME VALUE OF MONEY

: UNIT STRUCTURE :

4.0 Learning Objectives

After learning this unit, you will be to understand:-

- Concept of Future value and Present value
- Meaning of simple interest and compound interest.
- Compounded Value of series of cash flow
- Present Value of a Single Amount
- Present Value of series of cash flow
- Sinking Fund Factor
- Loan Amortization

4.1 Introduction

In finance the value of money is measured in two terms. (i) Future Value (ii) Present Value. Future value concept is known interest theory.

Future value is the amount of money that an original investment will grow to be, over time, at a specific compounded rate of interest .e.g. you have invested ₹ 1000 @4% for 5 years. The amount which gets on maturity (after 5 years) is known as Future Value.

This calculation is as follows:

Investment	R 1000	
+ Interest @ 4%	40	for the first year
	1040	
+ Interest @4%	41.60	for the second year
	1081.60	
+ Interest @4%	43.26	for the third year
	1123.86	
+ Interest @4%	44.96	for the fourth year
	1168.82	
+Interest @4%	46.75	for the fifth year
	1215.57	

On maturity R 1215.57 will be received by the investor and this amount is known as future value.

Present value is a measure in today's rupee of the receipt from future cash flow. In other words, it is comparison of the purchasing power of a rupee today v/s the buying power of rupee in the future. If investor is estimating to receive R 1000 after 2 years and interest rate is 4% in this case present value of R 1000 which is to be received after 2 years @ 4% is R 962 (R 1000 x .962). .962 is present value of R 1@4% which is to be received after 2 years. This value is available from present value table. These calculations are based on certain formulas which are discussed subsequently.

Both concepts of future value and present value are having great importance in financial management. All relevant aspects pertaining to them are discussed here.

4.2 Future Value

The concept of future value is very old concept. This concept is conventional concept in the context of savings to be made to meet future requirements. Under this concept funds are invested in certain securities to earn interest on it. In present time it is used by pensioners. Under this title simple interest and compound interest are calculated. There are certain components which are required to calculate interest these components are time period –this time period may be in terms of days, Weeks or months, another component is rate of interest it is always in the form percentage and last component is principal amount. This future value can be principal amount and receivable interest.

4.2.1 Simple Interest

Under simple interest, interest in calculated on principal amount at specified rate. To calculate, total interest, numbers of years are added in it. There are three components to calculate simple interest amount. These are Principal Amount, Interest Rate and Number of Years. Different authors used different variables to define interest formula. For this unit the following formula is used.

$$S_I = P_0 (I) (N)$$

Where S_I = Simple Interest, P_0 = Principal Amount on zero day, I = Rate of Interest, N = Number of years.

Illustration:-1

Mr. Pankaj has deposited R 50,000 with X bank. This deposit would earn 8% interest per annum. This deposit is made for the period of 6 years.

(i) Calculate total interest receivable at the end of 6th year.

(ii) Calculate total future value receivable at the end of 6th year.

Answer: -

(i) $S_I = P_0 (I) (N)$

$= 50,000 \times .08 \times 6$

$=$ R 24,000

(ii) Total Future Value means Principal Amount + Receivable Interest

$FV_N = P_0 + P_0 (I) (N)$

Where FV_N= Future value after N years

$FV_N = 50,000 + (50,000 \times .08 \times 6)$

$= 50,000 + 24,000$

$=$ R 74,000

4.2.2 Compound Interest

Under compound interest, interest is calculated on principal as well as interest earned. Here interest of each year is reinvested under simple interest, interest of each year is not reinvested for the remaining subsequent period while creation of compound interest is based on reinvestment of interest for the remaining subsequent period.

There are different types of cases are to be dealt in the situation of compound interest. All these cases are discussed below.

(i) Compound value of a Single Amount :-

It is that case where one time investment at specified interest rate for specified period is done.

$CV = P_0 (1+I)^N$

Where CV = Compound Value

Illustration:- 2

Mr. Shukla has deposited R 50,000 with Y bank. This deposit would earn 8% interest per annum. This deposit is made for the duration of 6 years.

(i) Calculate compound value of deposit.

$CV_N = P_0 (1+I)^N$

$= 50,000 (1+0.08)^6$

$= 50,000 (1.587)$

$=$ R 79,350

Present Value	Conditions	Future Value
R 50,000 ———	Duration of 6 years ———	R 79350
	Interest rate 8%	|
		Result
	R 50,000 × 1.587	

Note:-

The compound value 1.587 is obtained from the future value table.

Manual Confirmation

Particulars	Total Investment (R)	R 1
t0 Principal Amount	50,000	1.00
+t1 Interest @ 8%	4,000	0.08
	54,000	1.08
+t2 Interest @ 8%	4,320	0.0864
	58,320	1.1664
+t3 Interest @ 8%	4,666	0.0466
	62,986	1.213
+t4 Interest @ 8%	5,039	0.0970
	68,025	1.31004
+t5 Interest @ 8%	5,442	0.13729
	73,467	1.44733
+t6 Interest @ 8%	5,877	0.115786
	79,344	1.5631

So in the above question R 50,000 x 1.587 = R 79350. This is nearer to R 79344. Difference between R 79350 and R 79344 exists due to conversion of fraction figure.

(ii) Different Compounding period:-

Generally the compounding period 1 year is used in practice. But this compounding may be more than 1 time in a year. This compounding period may be of two months, 3 months, 4 months and 6 months etc. The following formula is used in this regard.

$$CV_n = P0\left[1+\frac{I}{N}\right]^{MN}$$

Where$_n$ = Number of times per year compounding is done.

Illustration: - 3 (When half yearly compounding is given)

Shankar has deposited R 60,000 for the period of 6 years @ 6% and compounding is done half yearly. Determine the amount which is receivable at the end of 6th year.

Answer:-

$$CV_y^{th} = P_0\left[1+\frac{Int}{2}\right]^{MN}$$

$$CV_{6th\ year} = R\,60{,}000\left[1+\frac{0.06}{2}\right]^{2\times 6}$$

$$= R\,60{,}000 \times 1.426$$

$$= R\,85{,}560$$

Note: - 2 times × 6 years = 12 years & 6%/2 = 3%

Illustration: - 4 (When quarterly compounding is given)

Shiva has deposited R 60,000 for the period of 6 years @ 8% and compounding is done qaurterly. Determine the amount which is receivable at the end of 6^{th} year.

Answer:-

$$CV_{y}^{th} = P_0\left[1+\frac{Int}{4}\right]^{MN}$$

$$CV_{6th\ year} = R\,60{,}000\left[1+\frac{0.08}{4}\right]^{2\times6}$$

$$= R\,60{,}000 \times 1.608$$

$$= R\,96{,}480$$

Note: - Explanation for illustration no __3_ and ___4_.

In illustration no _3__duration is taken 12 years (half yearly for six years = 12) and interest rate is 3% (6% is yearly so half yearly 3%)

In illustration no___4_ duration is taken 24 years (quarterly for 12 years ∴ 4 quarter per year × 6 years) and annual interest rate is 2% (8% is yearly so quarterly 2%)

Here both time period and interest rate are not in fraction. If any of them is in fraction above stated method cannot be used and log and antilog calculations are required. For e.g. duration in $3\frac{1}{2}$ years, $3\frac{1}{4}$ years etc and interest rate 4.25% 4.30% 4.75% etc.

4.2.3 Compounded Value of series of cash flow

(a) When cash flow takes place at the end of year:

Basically, the meaning of annuity is series of cash flows (in flow or out flow) of a fixed amount for a specified period (number of years). The following formula can be used to determine compound value of a series of uneven cash inflow.

$CV_n = P_1(1+I)^{n-1} + P_2(1+I)^{n-2} + \text{———} P_{n-1}(1+I) + P_n$

Where CVn = Compound value at the end of 'n' year.

P1 = Payment at the end of year 1

P2 = Payment at the end of year 2

Pn = Payment at the end of year n

I = Interest

Illustration:-5

Ravi deposits stated amount at the end of respective year R 15,000, R 25,000, R 20,000, R 10,000 and R 25,000 in this savings account in the year t_1, t_2, t_3,t_4, t_5. Interest rate is 8%.

What will be compound value of his deposits at the end of 5 yearsR

Answer:-

$CV_n = P_1(1+I)^{n-1} + P_2(1+I)^{n-2} \text{———} P_5(1+I)^0$

$= (15000)\ (1+0.08)^4 + 25000(1+0.08)^3 + 20,000(1+0.08)^2$
$+10,000(1+0.08)^1 + 25000\ (1+0.08)^0$

$= 15,000\ (1.360) + 25,000\ (1.260) + 20,000\ (1.166) + 10,000\ (1.080)$
$+10,000(1)$

$= 20,400 + 31,500 + 23,320 + 10,800 + 10,000$

$= 96,020$

Substitute calculation method

Year	Annual Amount	No of times compounded	Compounding factor (8%) (*)	Future value
(1)	(2)	(3)	(4)	(5)
t_1	15,000	4	1.360	20,400
t_2	25,000	3	1.260	31,500
t_3	20,000	2	1.166	23,320
t_4	10,000	1	1.080	10,800
t_5	25,000	0	1	10,000
		Total R		**96,020**

Confirmation cash flow of t_1.

	R
t_1	15,000
+ int t_2	1,200
	16,200
+ int t_3	1,296
	17,496
+ int t_4	1,400
	18,896
+ int t_5	1,511
	20,407

In above calculation it is R 20,407 while manually it comes to R 20400. Since it is invested from t_1 onwards for first year compounded value is for 4 times.

* All values are obtained from future value interest factor (FVIF)

(b) When cash flow takes place in the beginning of the year.

$CV_n = P_0(1+I)^n + P_1\ (1+I)^{n-1} + P_2(1+I)^{n-2}$ ——— $P_{n-1}(1+I)+P_n$

Illustration:-6

Mr. Raj deposits stated in the beginning of the respective year R 15,000, R 25,000, R 20,000, R 10,000 and R 25,000 in his savings account in the year t_0, t_1,t_2,t_3 and t_4. Interest rate is 8%.

What will be compound value of his deposits at the end of 5th year ?

Answer:-

$CV_n = P_0(1+I)^n + P\ (1+I)^{n-1}$ ———— $P_4(1+I)^{n-4}$

$= 15000 (1+0.08)^5 + 25000 (1+0.08)^4 + 20,000 (1+0.08)^3$
$+ 10,000 (1+0.08)^2 + 25000(0.08)^1$
$= 15000 (1.469) + 25000 (1.360) + 20,000 (1.260)$
$+10000 (1.166) + 25000 (1.080)$
$= 22035 + 34000 + 25200 + 11660 + 27000$
$= R\ 1,19,895$

Substitute calculation method

Year	Cash out flow (I)	No of times compounded	Compounding factor	Future value (I)
t_0	15,000	5	1.469	22,035
t_1	25,000	4	1.360	34,000
t_2	20,000	3	1.260	25,200
t_3	10,000	2	1.166	11,660
t_4	25,000	1	1.080	27,000
		Total R		1,19,895

Short cut formula

When the cash flows involves at the beginning of the year compound value of annuity can be calculated with the following formula when even cash flow is available.

$$CV_n = P\left[\frac{(1+I)^{n-1}}{I}\right](1+I)$$

Illustration: - 7

Ramakant deposit R 5000 at the beginning of every year for 6 years in savings bank account at 6% compound interest. Calculate compounded value at the end of 6th year.

$$CV_6 = 5000\left[\frac{(1+0.06)6-1}{0.06}\right](1+0.06)$$

How to determine the period to double the invested amountR

Under this head if specific amount is invested at specific rate of interest how much time it will take to double the principal amount.

For this purpose two rules are used (i) Rule of 72 and (II) Rule of 69.

Formulas

Rule of 72	Rule of 69
DP = 72 ÷ I	DP = 0.35+69/I

Where DP = Doubling period in years

I = Interest Rate

Rule 69 gives more precise period as compared to Rule 72.

Illustration:- 8

Raman deposit R 5,000 today (t_0) at 12% rate of interest in how many years will this amount get doubleR

(i) Rule 72 = Dp = 72/I = 72/12 = 6 years

(II) Rule 69 = Dp =0.35+69/12 = 6.1 years

4.3 Present Value

Present value concept is exactly opposite to future value concept.

Future value is used to know the interest added to principal amount at a given simple or compound value interest rate and given number of years. Under future value concept the amount of future value is higher than amount invested because future value is sum of principal and interest amount.

On the other hand present value concept is used to know the present value of a sum that is receivable in future. Under present value concept the amount present value is lower than the amount receivable after certain period of time at certain percentage which is known as discount factor. The processes of determining present value of a future cash flows (cash inflow or out flow) is called discounting.

It is concerned with determining the present value of a future amount, assuming that the decision maker has an opportunity to earn a specific return on his investment. This rate of return is known in financial management as discount rate, cost of capital, hurdle rate or opportunity cost.

The computations of present value in different situations are as follows:

4.3.1 Present Value of a Single Amount

In present value concept it is explained that how much to invest now to get an amount on R 1 at the end of one year at specific discount rate.

The following formula is used to determine present value.

$$PV = FV_n \left(\frac{1}{(1+I)} \right)^n \text{ or } FV_n [PVIF_{I-n}]$$

Where PV = Present Value

FV_n = Future value receivable at the end of 'R ' years

I = Interest rate or discounting factor or cost of capital

n = Duration of cash flow

Or

$FV_n PVIF_{I-n}$

Illustration: - 9

An investor is expecting R 60,000 at the end of 3rd year @10% discount rate, determine present value of future receivable amount of R 60,000.

Answer:-

$$PV = FV3 \left[\frac{1}{(1+I)} \right]^3$$

$$= 40,000 \left[\frac{1}{1+0.10} \right]^3$$

Note: -Refer present value table and see present value of one rupee at 3 years for the rate of 10% and that is R 0.751.

= 40,000 × 0.751

= R 30,040

Explanation: - 10

The amount R 40,000 which will be received its present value is R 30,040 (aapprox). It means if R 30,040 invested at 10% for 3 years its value will be R 40,000.

Present Value		Conditions		Future Value
R 30,000	←	Duration 3 years Interest rate 10%	←	R 30,000
↑		↕		
Result		Process		
		40000 × 0.751		

3.3.2 Present Value of series of cash flows

There are different forms of cash flows and we may need to calculate present value of series of cash flows. For example in capital budgeting decisions, future cash inflows are converted into present value to check the viability of the project. These flows of cash can be even or uneven. So determination of their present value is to be done with specific formulas.

(a) Present value of uneven cash flows: The following formula can be used:

$$PV = \frac{CIF_1}{(1+I)^1} + \frac{CIF_2}{(1+I)^2} + \text{————} + \frac{CIF_n}{(1+I)^n}$$

Where: CIF_1 and $(1+I)^1$ indicates cash inflow at the end of first year and present value rate at the end of first year and so on.

PV = Present Value, CIF = Cash in flow

I = Rate of Interest (Discount factor or cost of capital)

n = number of years

Illustration: - 11

From the following information, calculate the present value of cash inflows at 10% interest rate.

Year	1	2	3	4	5
Cash inflow (R)	10,000	12,000	9,000	10,000	11,000

Answer:-

$$PV = \frac{10,000}{(1+.10)^1} + \frac{12,000}{(1+.10)^2} + \frac{9,000}{(1+.10)^3} + \frac{10,000}{(1+.10)^4} + \frac{11,000}{(1+.10)^5}$$

$$= \frac{10,000}{1.1} + \frac{12,000}{1.21} + \frac{9,000}{1.331} + \frac{10,000}{1.4141} + \frac{11,000}{1.6105}$$

= 9090 + 9917 + 6762 + 6830 + 6830

= 39,429

Note:-

Present value can also be calculated with help of present value formulas. But present value tables are available for this calculation.

Here present value of one rupee @ 10% interest at the end of following year will be as follows:

t_1	t_2	t_3	t_4	t_5
0.909	0.826	0.751	0.683	0.621

Present Value

Year	Cash Inflows	PV factor (10%)	Present Value
t_1	10,000	0.909	9,090
t_2	12,000	0.826	9,912
t_3	9,000	0.751	6,750
t_4	10,000	0.683	6,830
t_5	11,000	0.621	6,831
		Present Value	39,413

Note: - There is minor difference between calculated present value, which is due to rounding of figures.

(2) Discount factor is calculated as follows:

Formula $PV = \frac{FV}{(1+I)^n}$

$$t_1 = \frac{1}{\left(1+\frac{10}{100}\right)} = \frac{1}{1.10} = 0.909$$

$$t_2 = \frac{1}{\left(1+\frac{10}{100}\right)^2} = \frac{1}{(1.10)^2} = 0.826$$

and so on

(b) Present value of even cash flows: The formula would remain same.

$$PV = \frac{CIF_1}{(1+I)^1} + \frac{CIF_2}{(1+I)^2} + \frac{CIF_3}{(1+I)^3} \text{ ———— } + \frac{CIF_n}{(1+I)^n}$$

Illustration:- 12

From the following information calculate present value of cash inflow at 10% interest rate.

Year	1	2	3	4	5
Cash inflow (₹)	12,000	12,000	12,000	12,000	12,000

$$PV = \frac{12,000}{(1+.10)^1} + \frac{12,000}{(1+.10)^2} + \frac{12,000}{(1+.10)^3} + \frac{12,000}{(1+.10)^4} + \frac{12,000}{(1+.10)^5}$$

$$= \frac{12,000}{1.1} + \frac{12,000}{1.21} + \frac{12,000}{1.331} + \frac{12,000}{1.4641} + \frac{12,000}{1.6105}$$

= 10909 + 9917 + 9016 + 8196 + 7451

= R 45,489

Alternative Method:-

Here present value of one rupee @ 10% interest at the end of following year will be as follows:

t_1 0.909, t_2 0.826, t_3 0.751, t_4 0.683, t_5 0.621

Year	Cash Inflows (R)	PV factor (10%)	Present Value
t_1	12,000	0.909	10,908
t_2	12,000	0.826	9,912
t_3	12,000	0.751	9,012
t_4	12,000	0.683	8,196
t_5	12,000	0.621	7,452
Present Value		3.79	45,480

Alternative Method

Here the amount of cash inflow of each year is same so present value of annuity 3.79 will be available from present value interest factor for annuity (PVIFA)

Present Value = Annual Cash inflow (R) × PVIFA

= 12000 × 3.79

= R 45,480

4.4 Sinking Fund Factor

Sinking fund is fund created to accumulate the specified amount of sum in a future by way of regular periodic payment for some specific purpose. Basically here the problem involves the determination of amount of annuity for a given future value aftera given period at a given rate of interest. The following formula can be used.

$$Ap = \frac{FVA_n}{1}\left[\frac{I}{(1+I)n-1}\right]$$

Where: Ap = Annual payment

FVA_n = Future value after 'n' years

I = Interest Rate

Illustration:- 13

Finance manager of a company wants to redeem debentures of R 10,00,000 at the end of 5th year. Its interest rate is 12% calculate annual payment required.

$$Ap = \frac{FVA_n}{1}\left[\frac{I}{(1+I)n-1}\right]$$

$$= 10,00,000\ \frac{.12}{(1+.12)^5 - 1}$$

$$= 10,00,000 \times \left[\frac{.12}{1.7623 - 1}\right]$$

$$= 10,00,000 \times \left[\frac{.12}{7623}\right]$$

$$= 10,00,000 \times .1,57,406$$

$$= ₹\ 1,57,406 \text{ Annual payment required}$$

Alternative Method

$$Ap = 10,00,000 \times \frac{1}{Futuer\ Value\ Interest\ \ factor\ annuity\ @12\%\ \ for\ 5\ years}$$

$$Ap = 10,00,000 \times \frac{1}{6.353}$$

$$= ₹\ 1,57,406$$

Note: - Refer Future Value interest factors annuity @ 12% for 5 years, answer is 6.353.

4.5 Loan Amortization

In banking and finance an amortizing loan is a loan where the principal of loan is paid down over the life of the loan.

To determine amount of installment this is to be paid every year at specific rate in certain period. The following formula is used.

$$LI = PA\left[\frac{I(1+I)^n}{(1+1)^{n-1}}\right]$$

Where LI = Loan Installment

PA = Principal Amount

I = Interest Rate

R = number of years (loan repayment premium)

Illustration:- 14

Simaran Co. Ltd has raised loan of ₹ 15,00,000 @ 9% interest per year. This loan is to be repaid in six equal annual installments. Calculate the amount of installments.

$$LI = PA\left[\frac{I(1+I)^n}{(1+1)^{n-1}}\right]$$

$$= 15,00,000 \left[\frac{0.09(1+0.09)^6}{(1+0.09)-1} \right]$$

$$= 15,00,000 \left[\frac{0.09(1.677)}{(1.677)-1} \right]$$

$$= 15,00,000 \left[\frac{0.15093}{0.677} \right]$$

$$= 15,00,000 \times .2229$$

$$= ₹ 3,34,500$$

Alternate Method

$$LI = \frac{PA}{PVIFA}$$

$$= \frac{15,00,000}{4.486}$$

$$= ₹ 3,34,374$$

Rounding off ₹ 3,34,500

Check you progress

(1) The concept of _____ is applicable to future value.

(a) Interest (b) Discount Factor

(2) The concept of _____ is applicable to present value

(a) Interest (b) Discount Factor

(3) Purchasing power issue is concerned with _____.

(a) Future Value Theory (b) Present Value Theory

(4) Interest on Principal amount and interest is calculated under _____

(a) Simple Interest (b) Compound Interest

(5) Log and Anti-log is required to use to calculate compound valued when _____fraction.

(a) Time period and interest rate are in

(b) Time period only is in

(6) _____rule gives precise result to determine period to double the invested amount

(a) Rule of 72 (b) Rule of 69

(7) Present value theory measures _____

(a) Present value of rupee required in future

(b) Future value of rupee received in present

(8) Discount factor is known as _____

(a) Cost of capital (b) Interest rate

(9) For determination of regular period payment _____ is used.

(a) Sinking Fund Factor (b) Loan amortization

4.6 Let us sum up

In Financial management both future value and present value are having uniform significance. Future value determination is done with the help of interest component on the other hand present value determination is done with the help of discount factor (cost of capital). Generally future value is used for determination of income which will be received at a specific rate of interest after specific period of time. Under this head we have studied computation of simple interest, compounding interest and compound value of series of cash flow. Present value is used in corporate form of business. Under this head we have studied present value of single amount and present value of series of cash flows. Apart from these two values sinking fund factor and loan amortization are also studied for planning of repayment of borrowed funds.

4.7 Answers for check your progress

Check Your Progress

Answers: - (1-a), (2-b), (3-b), (4-b), (5-a), (6-b), (7-a), (8-a), (9-a)

4.8 Glossary

1. **Future Value Theory:** It is such theory where the amount is to be received in future after certain period of time at a certain rate of interest. This amount is to be received in future so theory developed for its determination is known as future theory. Thus receivable future amount is greater than present amount. To determine future value different methods are used like simple interest, compound interest etc.
2. **Present Value Theory:** It is that theory which exactly opposite future theory. Under this theory present value of rupee which is to be received in future after certain period at a certain rate of return (discount rate) is determined. This present value of amount receivable in future is always less then future value. Under future value interest rate is important component while for present value discount factor (cost of capital, opportunity cost) is important. To determine present value different situations are considered where present value of single amount, present value of series of cash flow etc are computed.

4.9 Assignment

State different situation for determination of future value and present value.

4.10 Activities

(iii) How future value theory is different than present value of theory?

4.11 Case Study

Obtain the different loan schemes of any bank and calculate amount of loan amortization.

4.12 Further Readings

1. Financial Management – P. C. Tulsian
   Bharat Tulsian
2. Financial Management – Ravi Kishore

BLOCK SUMMARY

In this block we had a detailed discussion regarding basics of financial management and various sources of long term finance. Explanation in detail was made in unit 1 on the main functions of financial management i.e. the role of financial management, we also discussed the objectives of financial management. The role of a finance manager is very crucial in the smooth running of the organisation. He has to regularly monitor the finance condition of an organisation. He has to calculate the amount of funds required very earlier so that he can assure timely availability of the funds. He has to even find the different sources through which funds can be raised. He has to properly take care of availability of funds because in absence of funds the whole functioning of the organisation will come to halt. Apart from this in 2nd unit we discussed the various long term sources of finance through which the long term needs of fund of an organisation can met easily. Unit 3 is prepared to explain different short term sources of finance. For better understanding of us each source of finance, their types. advantages and limitations are also explained. these are two theories to determine value of investment. These theories are future value and present value, both are explianed with appropriate illustrations.

So in short this block gave a very detailed account of information regarding finance and financial management.

BLOCK ASSIGNMENT

Short Answer Questions

Write short notes on

a. Maximization of Profit.
b. Role of Finance manager.
c. Objectives of financial Management.
d. Equity Capital
e. Term Loans
f. Debentures

Long Answer Questions

1. Explain the profit and wealth maximization concept.
2. Which should be given the importance in the long run?
3. Write a detailed note on long term sources of finance.

Enrolment No.: ☐

1. How many hours did you need for studying the unitse

Unit No.	**1**	**2**	**3**	**4**
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Items	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	☐	☐	☐	☐	———
Language and Style	☐	☐	☐	☐	———
Illustration used (Diagram, tables etc)	☐	☐	☐	☐	———
Conceptual Clarity	☐	☐	☐	☐	———
Check your progress Quest	☐	☐	☐	☐	———
Feed back to CYP Question	☐	☐	☐	☐	———

3. Any Other Comments

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FINANCIAL MANAGEMENT

BLOCK-2 COST OF CAPITAL, CAPITAL STRUCTURE AND LEVERAGES

UNIT 1

COST OF CAPITAL

UNIT 2

CAPITAL STRUCTURE THEORIES

UNIT 3

ANALYSIS OF LEVERAGES

BLOCK 2 : COST OF CAPITAL, CAPITAL STRUCTURE AND ANALYSIS OF LEVERGAES

Block Introduction

As we have already studied the importance of financial management in this curriculum of management. Keeping in view of this we will move a little ahead to discuss few of the very important topics of financial management.

This block is divided into three units. The units cover the topics cost of capital, elements of cost of capital, capital structure, capital structure theories, all types of leverages, like operating leverage, financial; leverage and total leverage. The unit one will becovering the topic cost of capital in detail.It will explain the readers in detail aboutthe various elements of cost of capital. Discussion shall also be made on opportunity cost. Study shall also be made on the various factors that affect the capital structure i.e whether the capital should contain equity or debt or in what ratio the equity and debtbe maintained. In the second unit a detailed discussion has been made on the various theories of capital structure. These theories have been given regarding the composition of capital i.e what amount of capital should be through the equity and what should be through debt. In the third unit different types of leverages are explained with illustration. The role of leverage is also explained.

After going through this detailed study the readers would be feeling it very interesting and confident enough in this topic.

Block Objective

After reading this block, you will be able to understand :

- Trial balance and its limitations.
- Concept of cash capital.
- Classify cost of capital.
- Explain trading on enquiry.
- Enumerate and explain elements of cost of capital.
- Elaborate on opportunity cost of capital.
- The meaning of Capital Structure.
- Factors affecting the capital structure.
- Theories of capital structure.
- Realize how beta is related to capital structure.
- Explain adjusted present value.
- Operating leverage meaning, formula and risk associated with it
- Financial leverage meaning, formula and risk associated with it
- Total leverage meaning, formula and risk associated with it

Block Structure

Unit 1: Cost of Capital

Unit 2: Capital Structure Theories

Unit 3: Analysis of leverages

Unit 1

COST OF CAPITAL

: UNIT STRUCTURE :

1.0 Learning Objectives

After learning this unit, you will be able to understand:

- Concept of cash capital.
- Classify cost of capital.
- About trading on enquiry.
- Enumerate and explain elements of cost of capital.
- Elaborate on opportunity cost of capital.

1.1 Introduction

The cost of capital is an important concept in formulating firm's capital structure. It is one of the cornerstones of the theory of financial management. The cost of capital is an expected return that the provider of capital plans to earn on their investment. It determines how a company can raise money (through a stock issue, borrowing or a mix of the two). Cost of capital includes the cost of debt and the cost of equity.

The main objective of business firm is to maximize the wealth of share holders in long run. Capital (money) used for funding a business should earn returns for the

capital providers who risk their capital. The management should only invest in those projects which give a return in excess of cost of funds invested in the projects of the business.

For an investment to be worthwhile, the expected return on capital must begreater than the cost of capital. In other words, the risk-adjusted return on capital (that is, incorporating not just the projected returns, but the probabilities of those projections) must be higher than the cost of capital. Difficulty will arisein determination of cost of funds when it is raised from different sources and different quantum.

The cost of debt is relatively simple to calculate, as it is composed of the rate of interest paid. In practice, the interest rate paid by the company will include the risk-free rate plus a risk component, which itself incorporates a probable rate of default (and amount of recovery given default). For companies with similar risk or credit ratings, the interest rate is largely exogenous.

Cost of equity is more challenging to calculate as equity does not pay a set return to its investors. Similar to the cost of debt, the cost of equity is broadly defined as the risk-weighted projected return required by investors, where the return is largely unknown. The cost of equity is therefore inferred by comparing the investment to other investments with similar risk profiles to determine the "market" cost of equity. The cost of capital is often used as the discount rate, the rate at which projected cash flow will be discounted to give a present value or net present value.

1.2 Concept of Cash Capital

1.2.1 Definition

The cost of capital is the rate of return the company has to pay to various suppliers of funds in the company. There is a variation in the costs of capital due to the fact that different kinds of investment carry different levels of risk which is compensated for by different levels of return on the investment.

In operational terms, cost of capital refers to the discount rate that would beused in determining the present value of the estimated future cash proceeds and eventually deciding whether the project is worth undertaking or not. The cost of capital is visualized as being composed of several elements. Elements are the cost of each component of capital. The term 'component' means the different sources from which funds are raised by a firm. The cost of each source or component is called as specific cost of capital.

1.2.2 Importance

The cost of capital can be used as a tool to evaluate the financial performance of top management. The actual profitability of the 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.

It is an important element, as basic input information in capital investment decisions, in the present value method of discount cash flow techniques; the cost of capital is used as the discount rate to calculate the NPV.

The cost of Capital acts as a determinant of capital mix in the designing of balanced and appropriate capital structure.

The cost of capital can be used in making financial decision such as dividend Policy capitalization of profit, rights issue and working capital, bonus issue and capital structure.

The cost of Capital differs according to the situation. The different situations are as follows:-

- Cost of existing debentures which are not redeemable but can be traded in market.
- Cost of new debentures where there is a mention of flotation costs issue expenses.
- Cost of Redeemable dentures.
- Cost of new ES where there is Floatation cost.
- Cost of new ES using capital asset Pricing Model(CAPM)
- Cost of new ES on the basic of realized Yield.

Weighted Average cost of capital (WACC) using book values as weights. WACC using market values as weights

Check your progress 1

1. The ..... can be used as a tool to evaluate the financial performance of top management
   a. cost of capital
   b. Capital structure
2. The cost of capital is ..... as being composed of several elements.
   a. visualized
   b. determinant
3. The actual profitability of the project is compared to the actual cost of capital funds raised to .....
   a. finance the Report
   b. finance the project
4. The cost of Capital acts as a determinant of capital mix in the designing of ..... and appropriate capital structure.
   a. Capital
   b. balanced
5. ..... cost of capital (WACC) using book values as weights.
   a. Weighted Average
   b. High Average

1.3 Elements of Cost of Capital

Cost of Equity (K_E)

Cost of Retained Earnings (Ke)

Cost of Preferred Capital (Kp)

Cost of Debt (Kd)

Explanation of all the above elements is as follows

1.3.1 Cost of Equity

The funds required for the project are raised from the equity share holders which are of permanent nature. These funds need not be repayable during the lifetime of the organization. Hence it is a permanent source of funds. The equity share holders are the owners of the company. The main objective of the firm is to maximize

the wealth of equity share holders. Equity share capital is the risk capital of the company. If the company's business is doing well the ultimate and worst sufferers are the equity share holders who will get the return in the form of ends from the company and the capital appreciation from their investment. If the company comes for liquidation due to losses, the ultimate and worst sufferersare the equity share holders. Sometime they may not get their investment back during the liquidation process.

Profits after tax less dividends paid out to the share holders, are funds, that belong to the equity share holders which have been reinvested in the company and therefore, those retained funds should be included in the category of equity, or equity may be defined as the minimum rate of return that a company on the equity financed portion of an investment project so that market of the shares remain unchanged.

Approaches

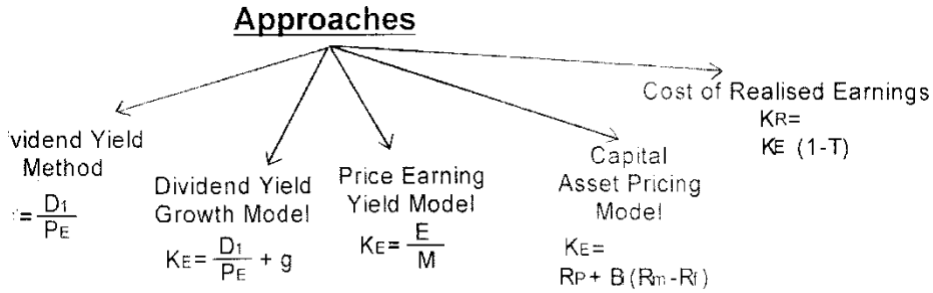

Fig 1.1 Approches

Dividend Method or Dividend Price Ratio Method

As per this method the cost of capital is defined as the discount rate that gets the present value of ail expected future dividends per share with the net proceeds of the sale (or the current market price) of a share.

This method is based on the assumption that the future dividends per share is expected to be constant and the company is expected to earn at least this yield to keep the share holders content.

$$K_E = \frac{D_1}{P_E}$$

Where,

K_E = Cost of Equity

D_1 = Annual Dividend per year

P_E = Ex-dividend market price per share

Example:-

1. C ltd. has disbursed a dividend of R 18% on each equity share of R 10.Current market price of share is R 12. Calculate the cost of equity as per dividend yield method. Issue cost is 5% on face value.

$$K_E = \frac{\text{Rs. } 1.80}{\text{Rs. } 11.50} \times 100 = 15.65\%$$

$$K_E = \frac{D_1}{NP}$$

(NP) i.e. Net proceeds per share

$$= \frac{(10{,}000 \text{ equity share} \times \text{Rs. } 12) - \text{Rs. } 5000}{10{,}000 \text{ Equity Shares}}$$

$$= \frac{\text{Rs. } 1{,}15{,}000}{10{,}000} = ₹\ 11.50 \text{ per share}$$

Dividend Growth Model

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 used to define the cost of equity capital based on the dividends and the growth rate.

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

Where,

k_E= Cost of equity capital

D = Expected dividend per share

G = Rate of growth in dividends

NP = Net proceeds per share

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.

Example:-

Loya Ltd. issues 2000 new equity shares of ₹ 1000 each at par. The floatation costs are expected to be 5% of the share price. The company pays a dividend of ₹100 per share initially and the growth in dividends is expected to be 5%. Compute the cost of new issue of equity share.

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

$$= \frac{10}{1000 - 50} + 5\%$$

$$= 15.53\ \%$$

Price Earning Yield Model

This method takes into consideration the Earning per share (EPS) and the market price per share. It is based on the argument tha tevenifthe earnings are not disbursed as dividends, it is kept in the retained earnings and it causes future growth in the earnings of the company as well as the increase in the market price of the share. In calculation of cost of equity share capital, the earnings per share are divided by the current market price.

$$K_E = \frac{E}{M}$$

Where,

E = Current earnings per share

M = Market price per share

Example:

Riya Ltd. has 50,000 equity shares of R10 each and its current market value is R 45 each. The after tax profit of the company for the year ended 31st march 2020 is R 9,60,000. Calculate the cost of capital based on price / earning method

$$\text{Calculation of EPS} = \frac{\text{Rs. } 9,60,000}{50,000 \text{ no ES}} = \text{R } 19.20$$

$$K_E = \frac{E}{M} = \frac{\text{Rs. } 19.20}{\text{Rs. } 45} = 0.42\ 67 \text{ or } 42.67\%$$

Capital Asset Pricing Model (CAPM)

The CAPM divides the cost of equity into two components, the near risk- free return available on investing in government bond and an additional riskpremium for investing in a particular share or investment. The risk premium in turn comprises average return of the overall market portfolio and the beta factor (or risk) of the particular investment, putting this all together the CAPM assesses the cost of equity for an investment, as the following:

$$K_E = Rf + Bi\ (Rm - Rf)$$

Where

Rf = Risk free rate of return

Rm = Average market return

Bi = Beta of the investment

Example

Rohan Ltd: share beta factor is 1.40. The risk free rate of interest on government securities is 9%. The expected rate of return on company equity shares is 16%. Calculate cost of equity capital based on capital asset pricing model

K_E = 9% + 1.40 (16% - 9%)

= 9% + 1.40 (7%)

= 9% + 9.8% = 18.8%

The appropriate discount rate to apply to the forecasted cash flows in an investment appraisal is the opportunity cost of capital for that investment. The opportunity cost of capital is the expected rate of return offered in the capital markets for investments of a similar risk profile. Thus it depends on the risk attached to the investments cash flows.

1.3.2 Cost of Retained Earnings

The retained earnings are one of the major sources of finance available for the established companies to finance its expansion and diversification programmes. These are the funds accumulated over the years by the company bykeeping part of the funds generated without distribution. The equity share holders of the company are entitled to these funds and sometimes these funds are also taken into account while calculating the cost of equity. But so long as the retained profits are not distributed to the share holders, the company can use the funds within the company for further profitable investment opportunities.

The cost of retained earnings to the share holders is basically an opportunity cost of such funds to them. It is equal to the income that they would otherwise obtain by placing these funds in alternative investment.

$K_R = K_E (1 - T)$

Where,

K_R = Cost of Retained earnings

K_E = Cost of Equity Capital

T = Tax rate of Individuals

Example:-

The Cost of E/s capital of S Ltd. is 24%. The personal taxation of individual share holders is 30%. Calculate the cost of retained earnings.

$K_R = K_E (I - T)$

$= 24\% (1 - 0.30\%)$

$= 24\% (1 - 0.30)$

$= 16.8\ \%$

1.3.3 Cost of Preferred Capital

The cost of preference share capital is the dividend expected by its investors. Moreover, preference share holders have a priority in dividend over the equity share holders. In case dividends are not paid to preference share holders, it willaffect 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 of preference can be calculated as

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

Where,

K_p = Cost of preference capital

D = Annual preference dividend

P = Preference share capital (Proceed)

When preference shares are issued at premium or discount or when cost of flotation is incurred to issue preference share, 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.

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

Example

Spice jet airlines issued 20,000 10% preference share of R 100 each. Cost of issue is R2 per share. Calculate cost of preference capital if these shares are issued (a) at premium of 10%. (b) at a discount of 5%.

– Cost of Preference Capital, $K_p = \frac{D}{NP}$

(A) $K_P = \frac{2,00,000}{20,00,000 - 40,000} \times 100$

$= \frac{2,00,000}{19,60,000} \times 100 = 10.2\%$

(B) $K_p = \frac{2,00,000}{20,00,000 + 2,00,000 - 40,000} \times 100$

$= 2,00,000 \times 100 = 9.26\%$

$= 21,60,000$

– Cost of Preference Capital, $K_p = \frac{D}{NP}$

(C) $K_p = \frac{2,00,000}{20,00,000 - 1,00,000 - 40,000} \times 100$

$= \frac{2,00,000}{18,60,000} \times 100 = 10.75\%$

Cost of Redeemable Preference shares:

$$\left(D + \frac{Rv}{N} - Sv\right)$$

$$\left(\frac{Rv - Sv}{2}\right)$$

Kp Cost of preference shares

D = Constant annual dividend payment N = No. Of years to redemption

R = Redeemable value of preference shares at the time of redemption,

S = Sale out value of preference shares less discounts floatation expenses

Example:-

$$K_p = \frac{D + \left(\frac{Rv - Sv}{N}\right)}{\left(\frac{Rv + Sv}{2}\right)}$$

D = Coupon rate i.e. R 12

N = Years to redemption i.e. 15 yrs.

R = Redeemable value with 10% premium i.e. R 110

S = Sale Value (Nominal value - discount – flotation cost)

i.e. R 1000- R 5- R 5 =90.

$$K_p = \frac{12 + \left(\frac{110 - 90}{15}\right)}{\left(\frac{110 + 90}{2}\right)}$$

$$= \left(\frac{12 + 1.33}{100}\right) = \frac{13.33}{100} = 0.13.33 \text{ or } 13.33\%$$

1.3.4 Cost of Debt

The cost of debt is the rate of interest payable on debt capital obtained through the issue of debentures. The issue of debentures involves a number offloatation charges, such as printing of prospectus, advertisement, underwriting, brokerage etc. Again, debentures can be issued at par or at timesbelow par (at discount) or at times above par (at premium).

The cost of debt capital is given as

$$Kd = \frac{1}{P}$$

Where,

Kd = Cost of debt (before tax)

I = Interest

P = Principal

Where debentures are issued at premium or at discount, the formula:

$$Kd = \frac{I}{NP}$$

Where,

Np = net proceeds

The after tax cost of debt may be calculated as–

After tax cost of debt = Kd(1-t)

Where, t is the tax rate.

Example:

ABC Ltd. Issues ₹ 50,000, 8% debentures at a premium of 10%. The tax rate applicable to the company is 30% compute the cost of debt capital.

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

$$= \frac{4,000}{50,000}(1-0.3)$$

$$= \frac{4,000}{50,000}(0.7)$$

$$= 5.60\%$$

Practical Problems with Solutions: Question:

A Company issues 10% Debentures of ₹ 100/- each at par. Cost of Issue (also known as Floatation Cost) is 3% of the issue price. Calculate K_d (Cost of Debenture) if applicable tax rate is 40%.

Solution:

$$Kd = \frac{\text{Interest } (1-t) \times 100}{\text{Proceeds of a Debenture}}$$

$$= \frac{6 \times 100}{97}$$

$$= 6.18\%$$

Before Tax

$$Kd = \frac{\text{Interest} \times 100}{\text{Proceeds of a Debenture}}$$

$$= \frac{10 \times 100}{97}$$

$$= 10.31\%$$

10.31% less Tax 40% i.e. 4.12 = 6.18%

Cost of Debenture newly Issued and Redeemable

Question:

A company issued ₹ 100 /- Debenture at par carrying coupon rate of 10%. Cost of issue was 3%. Debentures are redeemable at par after 6 years. Calculate K (Cost of Debenture) assuming that issue cost cannot be claimed as tax deductible expenses. Applicable Tax Rate is 30%. Calculate the Cost of Debentures.

Solution.

This Question can be answered in 2 ways:

a) $$\text{Approximate } K_d = \frac{\text{Interest (1- t) + Annualized loss on Issue}}{\text{Average Value of Debentures}} \times 100$$

$$= 97 + 100/2 = 98.5$$

$$= 7 + 0.5 \times 98.50$$

$$= 7.614\%$$

$$\text{Note : Annualized loss} = \frac{Rs.3}{6 years} = \text{Yearly ₹ } 0.5$$

b) We can calculate more precisely Kdis when we calculate the Internal Rate Return or

Rate of Discount at which Net Present Value of Cash Flows associated with the Debenture has Zero '0' NPV.

With the help of the NPV know we shall find out the Internal Rate of Return (IRR):

1% change (from 7% to 8%) gave a change of 4.601

?% change will give change of 2.962

$1 \times 2.962 = 0.644\%$

4.601

There fore, IRR = 10.644% which is the Cost of Debenture.

Question:

A company issues ₹ 100/- Preference Shares at a Discount of 2%. Preference Shares are redeemable after 6 years at a Premium of 3%. Coupon Rate is 10%. Calculate Kp (Cost of Preference Capital) as precisely as possible.

Solution

We will have to calculate the Internal Rate of Return (IRR) but to know the approximate range within which the IRR will lie we need to calculate the approximate Kp first:

a) Approximate $K_P = 10 + 5$

6×100

$98 + 103$

$K_p = 10.776$

$$K_p = \frac{\text{Pre. sh. divi. + Annualise loss on issue and redemption}}{\text{Average value of share}}$$

$$\text{Avarage value of shares} = \frac{98 + 103}{2} = 100.50$$

$$\text{Annualized loss} = 2 + \frac{3}{6} = 0.833$$

$$= \frac{10 + 0.8333}{100.5} \times 100$$

We have known the Range is between 10% and 11% so we can calculate NPV and further with the help of NPV we shall find out the Internal Rate of Return (IRR).

1% change (from 10% to 11%) gave a change of 4.207

?% change will give change of 3.622b

Therefore, the Internal Rate of Return (IRR) = 10.861% which is the Cost of Preference Capital.

Problems for Practice

1. Capital structure of a company is as follows:

12%termloan	R 3 crores
Equity capital	R 2 crores
Retained earnings	R 4 crores

Earnings per share and dividend have steadily grown @ 6%. The same growth rate is expected to continue in future also. Market price per share is R 40. The tax rate is 60%. Calculate the WACC of the company.

2. Capital structure of a company in terms of market value is as under:

LoansR	3 crores
Equity	R 6 crores

Additional R 1.5 crores is to be invested next year. Current price of equity share is R 30 but additional equity shares can be issued at R 25 per share.

Additional investment of R 1.5 crores has to be raised as follows:

Retaine dearnings	R 0.5 crores
Fresh equity	R 0.5 crores
14% loan	R 0.25 crores
15% termloan	R 0.25 crores

Applicable tax rate is 60%.The expected rate of dividend grow this 5%. The additional investment is so planned that at each stage the existing debt- equity ratio should remain unchanged. Calculate marginal cost of capital of each chunk.

3. Book value of capital structure of a company is as follows:

10 lakh equity shares of R10 each	100 lakhs
10,000 11% preference shares of R100each	10 lakhs
Retained earnings	120 lakhs
13.5% debentures	50 lakhs
12% termloan	80 lakhs

Next equity dividend will be R 1.5. This will grow at 7% annually. The market price per share is R 20/-. The preference shares redeemable after 10years have a current market value of R 75.Debentures redeemable after 6 years are selling at R 80. The tax rate of the company is 50%.Calculate:

- Existing WACC using book value proportions
- Existing WACC using market value proportions

4. Consider a company whose details are furnished in question 3 above. It wishestoraise R100 lakhs from equity and debt in equal proportions.

Retained earnings to be used are R 15 lakhs. Fresh equity can be issued at R 16 per share. First R 25 lakhs can be borrowed at 14% and next R 25 lakhs at 15%. Calculate marginal cost of capital.

Assumptions of Cost of Capital

Assumptions:

Following assumptions underlying the analysis of cost of capital

- Each new investment is deemed to be financed from a pool of funds in which the various sources of long-term financing are represented in the proportions in which they are found in the capital structure. For example, suppose the proportions of equity and debts in the capital structure of a firm are equal. The firm is planning to undertake two investments, in projects 1 and 2 each requiring an outlay of R 200 lakhs. The total financing required is R 400 lakhs and this will be raised by issuing equity stock anddebentures to the extent of R 200 lakhs each. However, because of some 'lumpiness' in the process of financing, the firm would first raise R 200 lakh of equity financing at the time when project 1 is undertaken and then it would raise R 200 lakhs of debt financing when project 1 is undertaken. According to the pool financing assumption, each process k deemed to be financed by a mixture of equity and debt in equal proportion, though the specific financing sought at the time of undertaking 1, is only equity and at the time of undertaking 2 is only debt.
- The risk characterizing new investment proposals being considered is the same as the 5 risks characterizing the existing investment of the firm. In other words, the adoption of new investment proposals will not change the risk complexion of the firm.
- The capital structure of the firm will not be affected by the new investments. This means that the firm will continue to pursue the same financing policies.
- In general, if the firm uses n different sources of finance, the cost of capital is where, k_aAverage cost of capital

  Pi = Proportion of P source of finance

  K = Cost of the first source of finance

Check your progress 2

1. The ..... are one of the major sources of finance available for the established companies to finance its expansion and diversification programmes.
   a. dividends
   b. shares
   c. retained earnings
2. The ..... of the firm will not be affected by the new investments.
   a. Firm Structure
   b. Capital structure
3. The cost of debt is the rate of interest payable on…….. obtained through the issue of debentures.
   a. Debt capital
   b. Cost of capital
4. The cost of preference share capital is the dividend expected by its .....
   a. Supplier
   b. investors
5. The funds required for the project is raised from the ..... which are of permanent nature.
   a. Equity share holders
   b. Preference Shareholder

1.4 Classification of Cost Capital

Classification

Cost of capital can be classified in different ways. Some of them are given below:

1. Explicit cost and Implicit cost
2. Historical cost and Future cost
3. Cost of Capital and Capital Structure
4. Specific cost and Composite cost

1. 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.

Implicit cost represents the rate of return which can be earned by investing the capital alternative investments. The concept of opportunity cost gives rise to the implicit cost. The implicit cost represents the cost of the 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 share holders by investing the funds elsewhere. Computation of implicit cost of debt: There are certain costs, besides the actual interest entailed by the debt but the company does not take note of it since it is not incurred directly. With induction of additional dose of debt beyond certain level the company may run the risk of bankruptcy. The share holders may react to it strongly and in consequence, the share prices may tend to nose-dive. There may be further setback to share values caused by increased instability of

earnings consequent upon unfavourable leverage. The lossin shares values owing to increased risk and greater instability of earnings is termed as implicit cost or invisible cost of debt capital.

Thus, with increase in doses of debt, investors will demand higher interestrate because of the increased risk. Alongside in explicit cost, the implicitcost will also tend to riseas the company will beable to sell bond at lower price.

To arrive at the actual cost of debt capital, hidden or implicit cost should be added in the explicit cost. But the problem lies in computation of the implicit cost of capital.

2. **Historical cost and future cost:** Historical cost represents the cost which has already been incurred for financing project. It is computed on the basic 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 comparison with the standard or predetermined costs. In Cost Of Capital financial decisions, future costs are more relevant than the historical costs. Historical costs are only of historical value and not useful for cost control purposes.

3. **Specific cost and composite 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 weighted average cost of capital which 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. But where one type of capital is employed in the business, the specific cost of that capital alone must beconsidered.

4. **Average cost and marginal cost:** Average cost of capital refers to the weighted average cost calculated on the basic of cost of each source of capital and weights assigned to them in the ratio of their share to 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. A ctually, marginal cost is the total of variable cost.

Weighted Cost of Capital

The weighted average cost of capital is termed “as the average cost of the company’ s finance (equity, debentures, bank loans) weighted according to the proportion each element bears to the total of capital weightings usually based on market valuations, current yields and costs after tax”.

Capital Structure and Dividend Decisions

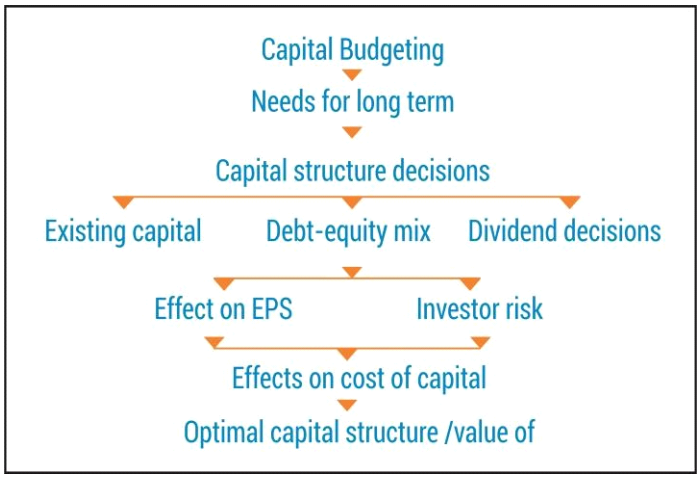

Fig 1.2 Capital Structure and Dividend Decisions

Cost of capital is the overall composite cost of capital and may be defined as the average of the cost of each specific fund. Weighted average cost of capital (WACC) is defined as the weighted average of the cost of various sources of finance, weight being the market value of each source of finance outstanding. Cost of various sources of finance refers to the return expected by the respective investors. A firm may procure long-term funds from various sources like equity share capital, preference share capital, debentures, term loans etc. at different costs depending on the risk perceived by the investors. When all these costs of different forms of long-term funds weighted by their relative proportions to get overall composite cost of capital, it is termed as 'weighted average cost of capital (WACC)' . The firm's WACC should be adjusted for the risk characteristics of a project for which the long-term funds are raised. Therefore, project' s cost of capital is WACC plus risk adjustment factor. The argument in favor of using WACC stems from the concept that investment capital from various sources should be seen as a pool of available capital for all the capital projects of an organization. Hence cost of capital should be weighted average cost of capital. Financing decision, which determines the optimal capital mix, is traditionally made without making any reference to WACC. Optimal capital structure is assumed at a point where WACC is minimum. For project evaluation, WACC is considered as the minimum rate of return required from project to pay off the expected return of the investors and as such WACC is generally referred to as the required rate of return' . The relative worth of a project is determined using this required rate of return as the discounting rate. Thus, WACC gets much importance in both the decisions.

Simple WACC - The simple WACC is calculated without consideration to the impact of tax on cost of capital. The combined cost of equity capital and debt capital is the WACC for a company as whole. If the company is all equity financed, the cost of equity willbe the cost of capital. In case of geared companies, the WACC can be stated as follows:

WACC = (Cost of Equity X Propostion of Equity) + (Cost of Debt X % Proportion of Debt)

Illustration 1

Good Health Ltd. has a gearing ratio of 30%. i.c. debits 30% and equity is 70%. The cost of equity is computed at 21% and the cost of debt 14%. The corporate tax rate is 40%. Calculate WACC of the company.

WACC = (21% X 0.70) + [14% (1 - 0.40) X 0.30] - 14.70% + 2.52% - 17.22% single corporate for is given so cost of debts is post tax.

Check your progress 3

1. ..... cost represents the cost which has already been incurred for financing project.
   a. Implicit
   b. Future
   c. Explicit
   d. Historical
2. Cost of capital is the overall composite cost of capital and may be defined as the average of the cost of each specific .....
   a. Bonus
   b. Fund
3. Historical cost represents the ..... which has already been incurred for financing project.
   a. Cost
   b. Share
4. Implicit cost represents the ..... which can be earned by investing the capital alternative investments.
   a. Rate of investment
   b. rate of return
5. Investors will demand ..... rate because of the increased risk.
   a. Higher interest
   b. Lower interest

1.5 Opportunity Cost of Capital

When an organization faces shortage of capital and it has to invest capital in more than one project, the company will meet the problem by rationing the capital to projects whose returns are estimated to be more. The firm might decide to estimate the opportunity cost of capital in other projects.

Illustration 2

Western Ltd. has got two project proposals A and B in hand with limited resources to take up one out of it. The estimated returns on capital employed of two projects are 15% and 18% respectively.

The opportunity cost of capital for taking up Project A is 18%, since if the funds are invested in Project B, the company will get 18% return on invested funds. Hence, expected return on Project B is the opportunity cost of capital for Project A.

Another approach to opportunity cost of capital concept is that the expected rate of return equates to the market interest rate for investments of a similar risk profile. While discounting the risky cash flow sat different rates, the companies will take into consideration different risk premium for different types of investments depending on the nature of investment. This is usually in the form of premium on what is considered the basic company cost of capital. The opportunity cost of funds can be analyzed from the following two angles:

Opportunity Cost of Equity Funds

If a company cannot earn sufficient profits, share holders will be dissatisfied. The company will not beable to raise funds from new issue of shares, because investors will not be attracted. Existing share holders who wish to sell their shares will find that buyers, who can invest in whatever securities they choose, will offer a comparatively low price, and the market price of the shares will be depressed. Since investors have added range of shares available to them there is a market opportunity cost of equity funds.

Opportunity Cost of Debt Funds

Financial management is concerned with obtaining funds for investment, and investing those funds profitability as to maximize the value of the firm. It is not enough to invest for profit, it is necessary to invest so that the profits are sufficient to pay lenders a satisfactory amount of interest. If a company cannot pay interest at the market rate demanded by lenders, the lenders will prefer to invest elsewhere in the capital market, where they can get this rate. There is a market opportunity cost of debt funds which a company must expect to pay for new finance.

Marginal Cost of Capital

Firms calculate cost of capital in order to determine a discount rate to use for evaluating proposed capital expenditure projects. The cost of capital is measured and compared with the expected benefits from the proposed projects. The marginal cost of funds is the cost of the next increments of capital raised by the firm. The costs of additional individual components of finance like shares, debentures, term loans etc. should be ascertained to determine its weighted marginal cost of capital. The new capital projects should be accepted if they have a positive net present value calculated after discounting the revenue and cost streams at marginal cost of capital to the firm. Emphasis is being placed on marginal cost of capital, for it is used as a cut off point for new investments. The concept of marginal cost of capital is based on economic theory that a firm should undertake a project whose marginal revenues are in excess of its marginal costs. When the capital investment decisions are taken in consonance of this principle, share holder' s wealth is maximized. The weighted average cost of capital (WACC) of the firm is not relevant for making new (marginal) resource allocation decisions. All the projects that have an internal rate of return greater than its marginal cost of capital would be accepted. Only when the returns of a particular project is in excess of its marginal cost of capital, can add to the total value of the firm. The marginal cost of capital of additional finances of a new project will reflect the changes in the total weighted average cost of capital structure, after the introduction of new capital into the existing capital structure.

Investment Appraisal and WACC

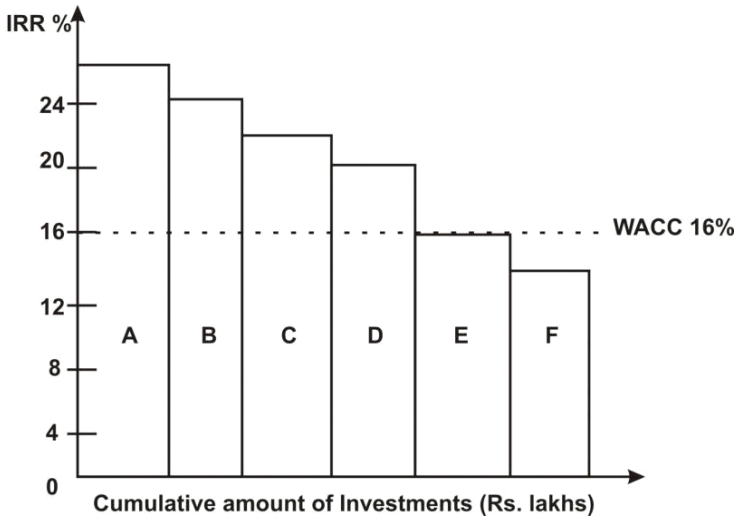

Fig 1.3 Investment Appraisal and WACC

The cost of capital is a market determined rate of interest, and is the discount rate or required rate of return which is used for discounting cash flows in investment appraisal calculations. The overall investment of a firm, in different projects can be invested, so long as its internal rate of return is above its WACC.

Figure illustrates that the firm can invest in projects A, B, C and D because their returns exceed the firm's cost of capital. The firm's value is maximized by selection of project A, B, C and D. Projects E and F should be rejected, otherwise the value of the firm will be diminished.

Marginal Cost of Capital and WACC

The relationship between marginal cost of capital (MCC) and weighted average cost of capital (WACC) is explained in Figure. While MCC is less than WACC, the WACC will fall. When MCC raise above WACC, the WACC will also show an increase, but the rate of increase is lesser than the rate of increase of MCC.

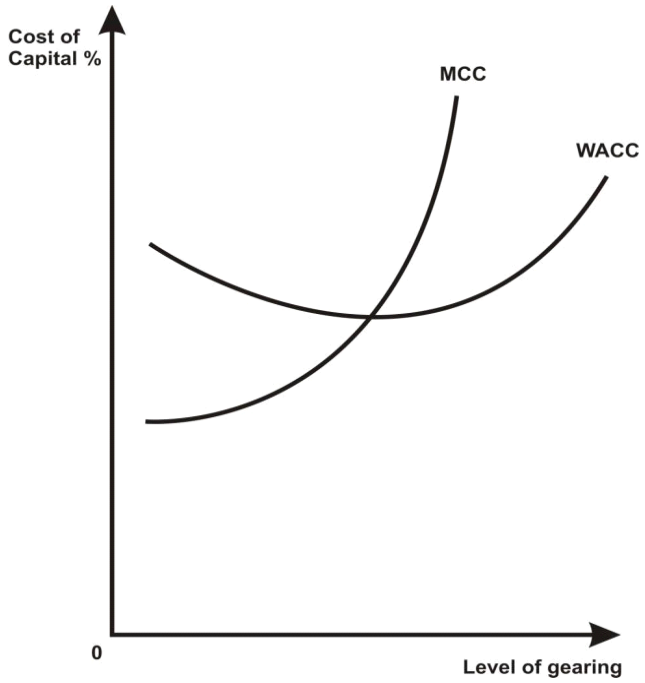

Fig 1.4 Marginal cost of capital and WACC - Relationship

Illustration 3

A company is considering raising of funds of about R100 lakhs by one of two alternative methods, viz., 14% institutional term loan and 13% non- convertible debentures. The term loan option would attract no major incidental cost. The debentures would have to be issued at a discount of 2.5% and would involve cost of issue of R 1 lakh. Discount and issue costs are too debentures.

Advise the company as to the better option based on the effective cost of capital in each case. Assume a tax rate of 50%. (C.A. Final Nov. 1991)

Comparative Statement

(Funds required R 100 Lakhs)

Particulars	**Option**	
	14% Term loan	10% converti?le de?entures
Face value	100	100
Less : Interest	-	1
Less : Discount	-	2.50
Net Realization	100	96.50
$\frac{1}{p}$ (1 - t)	$\frac{14}{100}$ (1.50)	$\frac{13.}{96.50}$ (1056)
	7%	6.74%

The main aim of business unit is to maximize the wealth of the firm and increase returns to the equity holders of the company. 'Trading on equity' helps the finance manager to select an appropriate mix of capital structure. Equity has the cost of expectations of the holders, preference capital has the cost of dividends and public deposit has the cost of interest. Therefore, it is the necessity to reduce the weighted average cost to be minimum through which a firm can increase the return to equity share holders.

Trading on equity is the financial process of using debt to produce gain for the residual owners. The practice is known as trading on equity because it is the equity share holders who have only interest (or equity) in the business income. The term bears its name also to the fact that the creditors are willing to advance funds on the strength of the equity supplied by the owners. Trading feature here is simply one of taking advantage of the permanent stock investment to borrow funds on reasonable basic. When the amount of borrowing is relatively large in relation to capital stock, a company is said to be 'trading on this equity' but where borrowing is comparatively small in relation to capital stock, the company is said to be 'trading on thick equity'.

The term leverage refers generally to circumstances which bring about an increase in income volatility. In business, leverage is the means through which abusiness firm can increase the profits. The force will be applied on debt; the benefit of this is reflected in the form of higher returns to equity share holders. It is termed as Trading on Equity' .

Check your progress 4

1. The ..... is measured and compared with the expected benefits from the proposed projects
   a. return on capital.
   b. interest on capital
   c. cost of capital
2. The term leverage refers generally to circumstances which bring about an ..... in income volatility
   a. increase
   b. Decrease
3. Trading on equity is the financial process of using debt to produce ..... for the residual owners.
   a. Loss
   b. gain
4. Firms calculate ..... in order to determine a discount rate to use for evaluating proposed capital expenditure projects
   a. Cost of share
   b. cost of capital.
5. If a company cannot earn sufficient ....., share holders will be dissatisfied
   a. Profits
   b. Loss

1.6 Trading on Equity

'Trading on Equity' acts as a level to magnify the influence of fluctuations in earnings. Earnings per share are abarometer through which performance of an industrial unit can be measured. This could be achieved by applying the operation of trading on equity. Any fluctuation in earnings before interest and tax (EBIT) is magnified on the earning per share (EPS) by operating trading on equity. It was observed that larger the magnitude of debt in capital structure, the higher is the variation in EPS given and variation in EBIT.

The effects of trading on equity can be clearer with the help of following illustration.

Illustration 4

Shriram Company is capitalized with R 10,00,000 dividend in 10,000 common shares of R 1.00 each. The management wishes to raise another R 10,00,000 to finance a major programme of expansion through one of the possible financing plan. The management may finance the company with

1. All common stock (Equity share capital)
2. R 5 lakhs in common stock and R 5 lakhs in debt @ 5%
3. All debt at 6% interest or
4. R 5 lakhs in common stock and R 5 lakhs in preferred stock (preference share capital) with 5 per cent dividend. The company' s existing earnings before interest and taxes (EBIT) amounts to R120,000. Corporation tax is assumed to be 50%.

Solution:

Impact of trading on equity, as observed earlier, will be reflected in earnings per share available to common stockholders. To calculate the EPS in each of the four alternatives, EBIT has to be first of all calculated:

	Proposal (A) R	**Proposal (B) R**	**Proposal (C) R**	**Proposal (D) R**
Eamings before interest & Taxes (EBIT)	1,20,000	1,20,000	1,20,000	1,20,000
Less: Interest	------	25,000	60,000	-----
Eamings before Taxes	1,20,000	95,000	60,000	1,20,000
Less: Taxes @50%	60,000	47,500	30,000	60,000
Eamings after Taxes	60,000	47,500	30,000	60,000
Preferred stock dividend	---	----	----	25,000
Eamings available to common stockholders	60,000	47,500	30,000	35,000
Number of common share	20,000	15,000	10,000	15,000
Eaming per share (EPS).	R 3.0	R 3.67	R 3.0	R 2.33

It is evident from the above example that, proportion of common stock intotal capitalization is the same in both the proposals 'B' and 'D' but EPS is altogether different because of addition of preference stock. While preferred stock dividend is subject to taxes whereas interest on debt is tax deductible expenditure resulting in variation in EPS in proposal 'B' and 'D' . It is also observed that, with a 50% tax rate the explicit cost of preferred stock is twice the cost of debts: When EBIT is R 1,20,000 proposal 'B' involving a total capitalization of 75% common stock and 25% debt, would be most preferable with respect to EPS.

It is generally accepted that level of earnings would remain the same even after the expansion of funds. Now let us assume that level of earnings before interest and tax (EBIT) increased 100% or exactly doubles the present level (i.e. R 2,40,000 in case of above example) in correspondence will increase in capitalization. Changes in earning per share (EPS) to common stockholders under different alternative proposals would be as follows –

Illustration 5

	Proposal (A) R	Proposal (B) R	Proposal (C) R	Proposal (D) R
Earnings before interest & Taxes (EBIT)	2,40,000	2,40,000	2,40,000	2,40,000
Less: Interest	-------	25,000	60,000	-----
Earnings before Taxes	2,40,000	2,15,000	1,80,000	2,40,000
Less: Taxes	1,20,000	1,07,500	90,000	1,20,000
Earnings after Taxes	1,20,000	1,07,500	90,000	1,20,000
Less: Preferred stock dividend	----	----	----	25,000
Earnings available to common stockholders	1,20,000	1,07,500	90,000	95,000
Number of common share	20,000	15,000	10,000	15,000
Earning per share (EPS).	R 06	R 7.17	R 09	R 6.23
EPS before additional issue	R 03	R 3.17	R 03	R 2.33

It is observed from illustration that increase in EBIT is magnified on the earning per share (EPS) where debt has been inducted. Since dividend on preferred stock is a fixed obligation and is less than the increased earnings, EPS in proposal 'D' increases more than twice the rise in earnings. On the other hand, in proposal 'B' and 'C' where debt comprises a portion of total capitalization, EPS would increase by more than twice the existing level, while in proposal 'A' , EPS has improved exactly in proportion to increase in EBIT.

It is also observed from the above example that larger the ratio of debt to equity, greater is the return to equity. Thus in proposal 'C' debt represents 50% of the total capitalization. EPS is magnified 3 times over the existing level while in proposal 'B' where debt has furnished 1/3 of the total capitalization, increase in EPS is little more than double the earlier level. This quickly changing of earning operates during a contraction of income as well as during an expansion.

Magnification of losses by trading on equity: Trading on equity not only acts as a level to magnify the influence of fluctuations in earning but trading on equity magnifies all losses sustained by the business concern. For example, assume that the Delhi company expects to sustain loss of R 30,000 before interest and taxes, loss per share under the different alternative proposals (as taken into consideration in above would be as follows :

Illustration 6:

	Proposal (A) R	Proposal (B) R	Proposal (C) R	Proposal (D) R
Loss before interest and taxes	- 30,000	-30,000	-30,000	-30,000
Add: Interest		-25,000	-60,000	
Loss after Interest	-30,000	-55,000	-90,000	-30,000
Loss per share	- R 1.50	- R 3.57	- R 09	- R 02

The important conclusion that could be drawn from the above illustration is that, loss per share is highest under alternative 'C' where proportion of debt is as high as 50% of the total fund and the lowest in proposal 'A' where leverage is zero. This example proved that trading on equity magnifies not only profits but losses also.

Use of 'trading on equity' : A magic of trading on equity is that trading on equity magnifies both profit and loss. A trading on equity is useful as long as the borrowed capital can be made to pay the business more than what it costs. It will lead to a decrease in profitability rate when it costs more that it earns.

Check your progress 5

1. ..... is a barometer through which performance of an industrial unit can be measured
   a. Price per share
   b. Return on share
   c. Earnings per share
2. Any fluctuation in is magnified on the earning per share (EPS) by operating trading on Equity
   a. earnings before interest and tax
   b. Earning after interest and tax
3. Trading on Equity quickly changing of ..... operates during a contraction of income as well as during an expansion.
   a. earning
   b. expanses
4. A magic of trading on equity is that trading on equity magnifies-.....
   a. loss.
   b. Profit
   c. none
   d. both profit and loss
5. Trading on Equity will lead to a ..... in profitability rate when it costs more that it earns.
   a. Increase
   b. decrease

1.7 Let Us Sum Up

After going through this unit we have gained sufficient knowledge on the cost of funds that we raise for a particular business.

After going through this unit we learnt that concept of cost of funds in finance is different from that in accounts. Except in case of term loans, it is necessary to take into consideration market values in case of equity shares, preference shares and debentures. In case of term loans and debentures there is a tax shelter in respect of interest payments. For dividend on shares there is no tax shelter. For evaluating a project it is necessary to know WACC. On the other hand the cost of capital can be used as a tool to evaluate the financial performance of top management. There are different sources and costs of capital - Cost of Equity (K), Cost of Retained Earnings (Ke), Cost of Preferred Capital (Kp), Cost of Debt (Kd).

There are different approaches to cost of equity - Dividend Method or Dividend Price Ratio Method, Dividend Growth Model, Price Earning Yield Model, Capital Asset Pricing Model. We even studied the various types of cost that are associated with the capital and they are Explicit cost and Implicit cost, Historical cost and Future cost, Average cost and Marginal cost, Specific cost and Composite cost. One another types of cost known as opportunity cost was also discussed here it is the cost for gone by choosing one option over an alternative one that may be equally desired. Thus, opportunity cost is the cost of pursuing one choice instead of another.

After going through this unit the students would have understood in a very interesting way the cost of capital and the various kinds of cost that are associated with the capital.

1.8 Answers for Check Your Progress

Check your progress 1

Answers: (1-a), (2-a), (3-b), (4-b),(5-a)

Check your progress 2

Answers: (1-c), (2-b), (3-a), (4-b),(5-a)

Check your progress 3

Answers: (1-d), (2-b), (3-a), (4-b),(5-a)

Check your progress 4

Answers: (1-c), (2-a), (3-b), (4-b),(5-a)

Check your progress 5

Answers: (1-c), (2-a), (3-a), (4-d),(5-b)

1.9 Glossary

1. **Optimal Capital Structure -** The percentages of debt, preferred stock, and common equity that will maximize the firm's stock price.
2. **Opportunity Cost -**The return on the best alternative use of an asset, or the highest return that will not be earned if funds are invested in a particular

1.10 Assignment

How is capital structure related to dividend decisionsb Explain.

1.11 Activities

Why is the cost of term loan debentures generally less than cost of equity or preference capitalb

1.12 Case Study

Read the Annual report of Indian Airlines and study its cost of capital and its impact on EVA (Economic Value Added) and other areas.

1.13 Further Readings

1. Financial Management - Prof. Dr. Mahesh A. Kulkarni.
2. Fundamentals of Financial Management- Dr. Prasanna Chandra.
3. Financial Management - Ravi M. Kishore.

Unit 2

CAPITAL STRUCTURE THEORIES

: UNIT STRUCTURE :

2.0 Learning Objectives

After learning this unit, you will beable to understand:

- The meaning of Capital Structure.
- List factors affecting the capital structure.
- Theories of capital structure.
- How beta is related to capital structure.
- Explain adjusted present value.

2.1 Introduction

The plan that a company incorporates for its financing is referred to as the capital structure of the company. In other words, it's the finances that the company uses in a long term. As the goal of any company or firm is towards increasing its value in market, the capital structure of the firm should beplanned or decided in such a way that it adds to the market value of the firm. Acompany' s capital structure can be termed as advantageous if the funds are used in such a manner that it not only increases the firm's market value, but also reduces thecompany' s cost of capital.

2.2 Capital Structure

2.2.1 Introduction to Capital Structure

The capital structure is how a firm finances its overall operations and growth by

using different sources of funds. Debt comes in the form of bond issues or long-term notes payable in the form of loans or debentures while equity is classified as common stock, preferred stock or retained earnings. Short-term debt such as working capital requirements is also considered to be part of the capital structure.

A company's proportion of short and long-term debt is considered when analyzing capital structure. When people refer to capital structure they are most likely referring to a firm's debt-to-equity ratio, which provides insight into how risky a company is. Usually a company more heavily financed by debt having greater risk, as this firm is relatively highly levered.

2.2.1 Factors Affecting Capital Structure

A company uses fixed fund sources viz debentures, term loans etc. along with equity capital. This is known as financial leverage. The firms generally make use of equity to raise debts. The number of debt units a company holds per equity unit is called the company's debt equity ratio. It is calculated by a formula

Debt Equity Ratio = Debt / Equity

Ideally, the small scale industries must have debt equity ratio of 3:1 while medium and large scale industries must have debt equity ratio of 2:1. A ratio of 3:1 indicates that for every 1 equity unit, the company can raise 3 units of debt. Higher the leverage, higher is the company's commitments in terms of interests and loan repayments. This in turn affects the returns of the equity share holders. Some of the other factors that must be considered while deciding the firm's capital structure are the firm's size, its cost of capital, trading on equity, cash flow, Flexibility a debt changes in capital structure, Nature of business, give policies, tax rates etc. the way the cash flows of the company are projected and other costs incurred.

Check your progress 1

1. A company uses fixed fund sources viz debentures, term loans etc. along with equity capital. This is known as .....
   a. Combined leverage
   b. Financial leverage
2. Debt Equity Ratio = ...
   a. Debt /Equity
   b. Equity /Debt
3. Higher the leverage, higher is the company's commitments in terms of interests and loan .....
   a. Payment
   b. repayments

2.3 Features of an Optimal Capital Structure

An efficient capital structure should encompass the following features:

- The capital structure should be such that the dilution of control should be minimal.
- The use of leverage should be optimum and at minimum cost leading to company's prosperity.
- The capital structure of the company should enable it to raise need based funds as well as stop the debts from a particular source if they are too expensive i.e. the capital structure should beflexible enough to sustain in varying conditions.

The use of debts should be minimal as it hampers the company' s solvency since the interest rates are very high.

Check your progress 2

1. The capital structure should be such that the dilution of control should be.....
   a. Maximum
   b. Minimal
2. The plan that a company incorporates for its financing is referred to as the ..... of the company.
   a. Equity Share structure
   b. Capital structure

2.4 Capital Structure Theories

The two essential components of capital structure of a company are debt and equity. Hence, the proportion of debt and equity is very important in capital structure. In other words, it is very essential to decide the level of financial leverage to be employed in any company. To decide this, it becomes necessary to understand the relationship that exists between firms' cost of capital and its financial leverage. Some of the assumptions that are made to understand this relationship are

- It is not expected for the net operating income to increase or decrease over the period of time.
- There is no income tax applicable, neither corporate, nor personal.
- A firm can alter its capital structure at any point of time without even bearing the transaction costs.
- The company can pay its earnings in terms of dividends i.e. the company can pay 100% dividends.

There are two extreme views on whether there exist any such things as optimal capital structure.

The Net Income Approach (NI) assumes that the cost of debt and that of equity are independent to capital structure. With high use of leverage, the weighted average cost of capital reduces, increasing the value of the firm in totality.

In Net Operating Income (NOI) approach, it is assumed that the cost of equity increases linearly with leverage. As the leverage changes, the value of the company and the weighted average cost of capital remains constant.

2.4.1 Traditional View

In Traditional approach, the cost of capital decreases, thereby increasing the value of the firm. This happens till a particular threshold is reached, after which the reverse happens i.e. the cost of capital increases thereby causing decline in the value of the firm.

Traditional approach is the mid-point between the net income and net operating approach and is often known as an intermediate approach. Traditional view uses a good mix of debt and equity to increase the firm's value or decrease its cost of capital. This approach indicates that the cost of capital reduces within a certain debt limit and then increases. Hence, according to traditional view, there existsa thing as optimal capital structure when the cost of capital reduces or the firm's market value increases.

In traditional view, the way in which the modifications to the capital structure affect the cost of capital can be classified into 3 steps:

- Initially, the cost of equity ke remains unchanged i.e. constant or rises very little with the debt. And even if it increases, it doesn't increase so much as to nullify the effect of a low-cost debt. However, in this stage, the cost of debt Kd remains constant or increases very slightly. Thus, the value of the firm increases with decrease in cost of capital and increase in leverage.
- In the second stage, the increase in leverage have minimal or no effect on the cost of capital or the market value of the firm as, by this time, the firm has already reached a particular degree of leverage, the reason being, the advantage of low-cost debt gets counterbalanced due to increase in the cost of equity. At that specific point, the firm's value will be at its highest or its cost of capital will be at its lowest.
- In the last stage, at a certain point, either the value of the firm starts decreasing with leverage or the cost of capital starts increasing. This is because the investors' demand for high equity capitalization rate due to high risk involved counterparts the advantages of low-cost debt.

Thus, these three stages indicate that the cost of capital is dependent on leverage. It falls with leverage, and reaches a particular minimal point after which it starts increasing.

The traditional approach is questioned or criticized as it indicates that by changing the way in which the risk incurred by the security holders is distributed, the totality of risk incurred by the security holders can be changed.

2.4.2 Modigliani-Miller Hypothesis

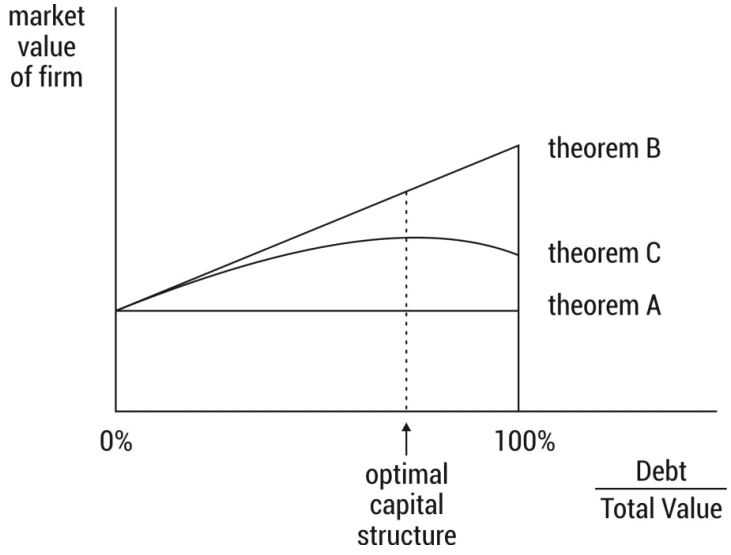

Fig 2.1 Optimal Capital Structure

According to Modigliani and Miller, the net operating income approach explains the relationship between leverage and cost of capital in three propositions. They have challenged the traditional approach by providing a rational reason for having constant cost of capital throughout all the levels of leverage.

The propositions made by Modigliani and Miller are based on certain assumptions:

- Trading of securities take place in capital markets that are perfect. Also, there will beno transaction costs involved, i.e. the investors do not have to bear any costs for buying or selling their securities.

- It is assumed that the investors behave rationally by choosing risk and return that is most profitable for them.
- The probability distribution value is expected to be same for all the investors.
- The firms can be clubbed together in one class based on their business risks. Firms that have same level of business risk can come under one class.
- There is no tax incorporated, neither corporate nor personal.
- There is 100 percentpayout to share holders i.e. the share holders are given all the net earnings by the firm.

The basic propositions of MM theory are:

Proposition I:

The total of market value of debt and market value of equity i.e. the total market value of the firm does not depend on the degree of leverage, and is equal to the firm's expected operating incomes at the rate pertaining to its risk class.

Thus, as per Proposition I,

Market value of the firm = Market value of equity + Market value of debt

= Expected Net Operating Income / Rate applicable to the firm based on risk class

Proposition II:

According to the proposition-II, Cost of equity is in a linear (directly proportional) relationship with the Debt-equity ratio. The required return on equity increases as the debt-equity ratio for the firm increases. This means the risk for equity holder increases with the debt increases in the capital structure.

Proposition III:

The cut-off rate for deciding the investment of a firm belonging to a particular risk class is not affected by the way in which the firm finances the investment. Thus, as per the proposition, since the financing and investment decisions are independent of each other, the financing decisions do not affect the average cost of capital.

Thus, according to the MM theory, the value of the firm is not affected by the financial leverage. The costs like bankruptcy costs, agencycosts, taxesetc. are some of the factors that are found to be disadvantageous in this approach.

Check your progress 3

1. The ..... assumes that the cost of debt and that of equity are independent to capital structure.
   a. Net Income Approach (NI)
   b. Net Operating Income (NOI)
2. According to Modigliani and Miller, the net operating income approach explains the relationship between ..... and cost of capital in three propositions.
   a. Cost of fund
   b. leverage
3. Traditional approach is the mid-point between the ..... and net operating approach and is often known as an intermediate approach.
   a. Net income
   b. Net outcome

2.5 CAPM and Capital Structure

The shareholder's return in terms of EPS or ROE is affected by leverage which also increases financial risk. As a result, the beta of the equity of a firm increases since it introduces debt in the capital structure of the firm. It is well known that individual securities form a portfolio and each security has its own beta. Also, the beta of the portfolio is nothing but the weighted average beta of individual securities. Likewise, a firm is comprised of portfolio of assets and hence, the weighted average of betas of individual assets is the betaasset of a firm ba. Thus,

$\beta a = \beta 1\ w1 + \beta 2\ w2 + \beta 3\ w3 \ldots$

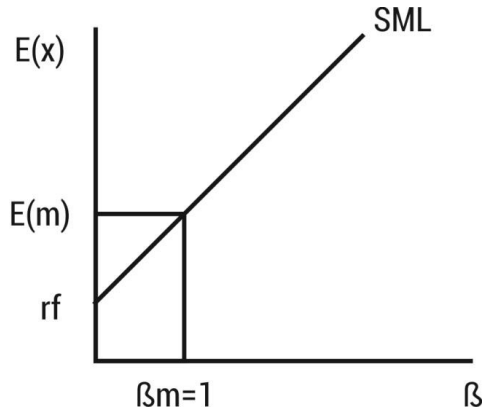

Fig 2.2 CAPM

Where βa is weighted average beta of assets, β1 is the beta of asset one, w1 is its weighted average and so on.

As debt and equity finances a firm's assets, its asset beta is also the weighted average of equity beta and debt beta of the firm. Thus,

$\beta a = \beta e\ we + \beta d\ wd$

Where be is equity beta, we is weighted average of equity, βd is debt beta and wd is weighted average of debt.

Debt and equity finances a firm's assets.

The market value of weighted average of equity is divided by the firm's total value. Likewise, the market value of weighted average of debt is divided by the firm's total value.

Check your progress 4

1. The shareholder's return in terms of EPS or ROE is affected by leverage which also increases financial .....
   a. Return
   b. Risk
2. CAPM and Capital Structure is well known that ..... form a portfolio and each security has its own beta.
   a. Individual securities
   b. Mix securities

2.6 Adjusted Present Value

The Adjusted Present Value (APV) is the sum of Net present value (NPV) of a project if financed exclusively by ownership equity and the present value of all the benefits of financing. This was first studied by Stewart Myers, a professor at the MIT Sloan School of Management and then, in 1973, it was theorized by Lorenzo

Peccati. The main benefit of this approach is a tax shield resulted from tax deductibility of interest payments. Another one can be a subsidized borrowing. The APV method of business valuation is normally useful in a Leveraged buy out (LBO) case since it has tremendous amount of debt, so tax shield is sizeable.

To be precise, an APV valuation model is the standard DCF (Discounted cash flow model) model. However, cash flows would be discounted at the cost of assets (instead of WACC), and tax shields at the cost of debt. APV and the standard DCF gives the same result if the capital structure remains constant.

Formula:

Base-case NPV + Sum of PV of financing

Example:

Initial Investment = 500000

Expected Cash flow = 45000 (Perpetuity)

Opportunity cost of capital : 10%

Tax rate=35%

Project partly financed by 200000

NPV = -500000 + 45000/0.10 = -50000

PV (Tax Shield) = .35 x 200000 = 70000

APV = -50000 + 70000 = 20000

Check your progress 5

1. The ..... is the sum of Net present value (NPV) of a project if financed exclusively by ownership equity and the present value of all the benefits of financing.
   a. DCF
   b. Adjusted Present Value (APV)
2. Adjusted Present Value was first studied by Stewart Myers, a professor at the MIT Sloan School of Management and then, in .....
   a. 1975
   b. 1973

2.7 Let Us Sum Up

In this unit we discussed the various concepts relating and associated with the cost and capital structure.

In this unit we discussed the map that a company incorporates for its financing is referred to as the capital structure of the company. That means it is the finances that the company uses in the long term. A company's capital structure would bebeneficial if the funds are used in a way that it not only increases the firm's market value, but also reduces the company's cost of capital. When a company uses fixed fund sources like debentures, term loans etc. along with equity capital, then it is known as financial leverage. An optimal capital structure should be such that the dilution of control should be minimal; the use of leverage should be high and at minimum cost leading to company' s prosperity. The use of debts should be minimal as it hampers the company's solvency since the interest rates are very high. Later in the unit we even discussed the various theories that play a major role in the determination of capital structure. Here we covered capital structure theories of Traditional View, Modigliani-Miller Hypothesis; Cost of equity is in a

linear (directly proportional) relationship with the Debt-equity ratio. The required return on equity increases as the debt-equity ratio for the firm increases. We even discussed the use of beta in capital structure is very important. Adjusted Present Value (APV) gives the difference between DCF (Discounted Cash Flow) Valuation and APV in using the cost of capital.

So this unit is going to be great help for the readers in understanding the concept associated with capital structure theories.

2.8 Answers for Check Your Progress

Check your progress 1

Answers: (1-b), (2-a), (3-b)

Check your progress 2

Answers: (1-b)

Check your progress 3

Answers: (1-a), (2-b), (3-a)

Check your progress 4

Answers: (1-b),(2-a)

Check your progress 5

Answers: (1-c),(2-d)

2.9 Glossary

1. **Net Present Value (NPV) Method -** A method of ranking investment proposals using the NPV, which is equal to the present value of future net cash flows, discounted at the marginal cost of capital.
2. **Debenture -** A long-term bond that is not secured by a mortgage on specific property.

2.10 Assignment

Write different Capital structure theories with examples.

2.11 Activities

Which factors affect the Capital Structure of a companyb

2.12 Case Study

Study the Capital Structure of GO Indigo airlines, DLF and Ranbaxy Ltd.

2.13 Further Readings

1. Financial management-ICFAI.
2. Financial management – I. M. Pandey
3. Financial management – P. C. Tulsian, Bharat Tulsian

Unit 3

ANALYSIS OF LEVARAGES

: UNIT STRUCTURE :

3.0 Learning Objectives

After learning this unit, you will be to understand:-

- What is leverage.
- Types of leverages.
- Impact of different leverages on activity of business enterprise
- Computation of different leverages.

3.1 Introduction

The term 'leverage' refers to the power to influence results. It represents the impact of introduction of one variable over other related variable. There are two types of expenses (cost): Fixed Cost and Variable Cost. Variable cost is directly related with revenue (sales) and it is component of production cost. But fixed are categorized into two categories (i) Operating Fixed Cost and (ii) Financial Fixed Cost. On the basis of this classification risks also categorized into two sections (i) Operating Risk and (ii) Financial Risk. The emergence of operating risk and financial risk is result of existence of operating and financial leverage respectively. The size of this risk in business enterprise is measured with the measurement of degree of operating and financial leverage. Theoretically higher the degree of leverages, invites higher degree of risk but at the same higher return also. Leverage ratios can be broadly classified into two groups: (i) Activity leverage and (ii) Structural leverage.

Classification of leverages

Activity leverage	Structural leverage
• Operating Leverage	• Debit Equity Ratio
• Financial Leverage	• Total Debt to Equity Ratio
• Total Leverage	• Debt to Net worth Ratio

The measurement or computation of activity leverage is based on information of income statement and structural leverage is based on information of balance sheet. Explanation of leverages is as follows:

Activity Leverage:-

The term activity refers to day to day activities of the enterprise which are doneto generate profit. There are three important ratios which are based on income statement. These ratios are (i) Operating Leverage, (ii) Financial Leverage and (iii) Total Leverage.

To compute activity leverage, the following mentioned income statement will be useful.

Income Statement

Particulars	R
Sales	✓
Less : Variable Cost	✓
Contribution	✓
Less : Operating Fixed Cost	✓
Earnings Before Interest and Tax (EBIT)	✓
Less : Interest (Financial Fixed Cost)	✓
Earnings Before Tax (EBT)	✓
Less : Tax	✓
Earnings After Tax (EAT)	✓
Less : Preference Share Dividend	✓
Earnings for equity share holders	✓
÷ No. of Equity Shares	✓
EPS	✓

3.2 Operating Leverage

3.2.1 Meaning: -

The emergence or existence of operating leverage is due to operating fixed cost in cost structure. There are three types of costs for cost structure – variable, fixed and semi variable or semi fixed. But for computation of operating leverage only two costs are considered variable and fixed. Operating leverage is evidence of operating fixed cost in cost structure.

Indication of operating leverage: The degree of operating leverage indicates proportion or percentage change in EBIT due to change in sales.

3.2.2 Formulas:-

(i) Degree of operating leverage = $\frac{\text{Contribution}}{\text{EBIT}}$

(DoL)

Or

Degree operating leverage = $\frac{\text{\% Change in EBIT}}{\text{\% Change in Sales}}$

3.2.3 When there can be operating leverageb

When Degree of leverage is >1 there can be operating leverage. If DoL = 1, it indicates there is no operating leverage it means there is no operating fixed cost in cost structure only variable cost exists.

Illustrations

Firm x and firm y manufacture the same product and their cost sheet is as under:-

Particulars	Firm X	Firm Y
Sales	6,00,000	6,00,000
Less Variable cost @ 40%	2,40,000	2,40,000
Contribution	3,60,000	3,60,000
Less Operating Fixed Cost	1,20,000	1,60,000
EBIT	2,40,000	2,00,000
Less Interest	60,000	40,000
EBIT	1,80,000	1,60,000
Less Tax 30%	54,000	48,000
EAT	1,26,000	1,12,000
Less Preference shares dividend	30,000	30,000
Earnings for equity share holders	96,000	82,000
÷ No of Equity shares	10,000	10,000
Earnings Per Share (EPS)	R 9.60	R 8.20

Ans:-

Firm X

$$DOL = \frac{\text{Contribution}}{\text{EBIT}} \quad \frac{3,60,000}{2,40,000} = 1.5$$

The second formula to determine DOL is

$$DOL = \frac{\% \text{ Change in EBIT}}{\% \text{ Change in Sales}}$$

	R
Assume Sales of next year is	7,50,000
Less : Variable cost @ 40%	3,50,000
Contribution	4,50,000
Less : Operating Fixed Cost	1,20,000
EBIT	3,30,000

Here sales is increased by R1,50,000 (R 7,50,000 - R 6,00,000) as compared to previous year and that is 25% $\left(\frac{1,50,000}{6,00,000} \times 100\right)$ while EBIT is increased by b 90,000 (b 3,30,000 - b 2,40,000) and that is 37.5% $\left(\frac{90,000}{4,40,000} \times 100\right)$

$$\therefore \frac{37.5\%}{25\%} = DOL = 1.5$$

Note : Under both the formulas DOL would remain same. But for second formula additional information is needed.

Firm Y

$$DOL = \frac{\text{Contribution}}{\text{EBIT}} \frac{3,00,000}{2,00,000} = 1.8$$

The second formulas to determine DOL is

$$DOL = \frac{\% \text{ Change in EBIT}}{\% \text{ Change in Sales}}$$

	R
Assume Sales of next year is	9,00,000
Less : Variable cost @ 40%	3,60,000
Contribution	5,40,000
Less : Operating Fixed Cost	1,60,000
EBIT	3,80,000

In case of firm Y sales is increased by R 3,00,000 (R 9,00,000 - R 6,00,000) as compared to previous year and that is 50% $\left(\frac{3,00,000}{6,00,000} \times 100\right)$ while EBIT is increased by R 1,80,000 (R 3,80,000 - R 2,00,000) as compared to previous year and that is 90% $\left(\frac{1,80,000}{2,00,000} \times 100\right)$ R $\frac{90\%}{50\%} = 1.8$

3.2.4 What is indicated by operating leverage.

DOL explains impact of changes in sales on EBIT. In case of firm X and firm Y DOL is 1.5 and 1.8 respectively. If sales is increased by 1% EBIT of firm X and

firm Y would be increase by 1.5% and 1.8% respectively. If sales increase by 5% in this case EBIT of Firm X and firm Y would increase by 7.5% (1.5% x 5%) and 9% (1.8% x 5%) respectively.

Let us confirm this impact

Particulars	Firm X	Firm Y
Sales (old)	6,00,000	6,00,000
Add: 5% increase	30,000	30,000
New Sales	6,30,000	6,30,000
Less: Variable Cost @ 40%	2,52,000	2,52,000
Contribution	3,78,000	3,78,000
Less: Fixed Cost	1,20,000	1,60,000
EBIT (New)	2,58,000	2,18,000
Less: EBIT (Old)	2,40,000	2,00,000
Increase in EBIT	18,000	18,000
Increase in EBIT in Percentage	$\left(\frac{18,000}{2,40,000}\times 100\right)$ 7.5%	$\left(\frac{18,000}{2,00,000}\times 100\right)$ 9%

3.2.5 Risk is associated with operating leverage.

Operating risk is associated with operating leverage. There is positive relation between operating leverage and operating risk. Operating risk is based on size of operating leverage. Higher the degree of operating leverage higher the degree of operating risk. Operating risk is known as Business Risk also.

But at the same time risk and return also have positive relation. Higher the risk, higher the return.

3.2.6 Component of cost structure which brings higher degree of operating leverage.

Higher operating fixed cost is responsible for higher degree of operating leverage.

Explanation:-

In the illustration, information about two firms is given. Both the firms have uniform sales, variable cost and contribution but their operating fixed cost is different.

Due to different fixed costs (firm X ₹ 1,20,000 and firm Y ₹ 1,60,000) so DOL is also different i.e. 1.5 and 1.8 for firm X and firm Y respectively.

Here firm Y is more riskier than firm X because DOL of firm Y is 1.8 and Firm X is 1.5.

But at the same due to higher risk the return of firm Y will be higher than firm X, when sales would increase EBIT of firm Y would increase by 7.5% and of firm X would increase by 9% when sales is increase by 5%.

Check Your Progress – 1

1) Operating leverage is categorized as _____
   (a) Activity Leverage
   (b) Structural Leverage
2) Operating leverage is associated with _____
   (a) Capital Structure
   (b) Cost Structure

3) The degree of operating leverage indicates proportion or percentage change in _____ due to change in _____

(a) Sales, EBIT

(b) EBIT, Sales

4) When operating leverage is 1% means

(a) No Variable Cost in Cost Structure

(b) No Fixed Cost in Cost Structure

5) Formula to determine degree of operating leverage is

(a) $\frac{\text{EBIT}}{\text{Contribution}}$

(b) $\frac{\text{Contribution}}{\text{EBIT}}$

3.3 Financial Leverage

3.3.1 Meaning :

The emergence of existence of Financial Leverage is due to Financial Cost (interest) in the Capital Structure. When along with owners capital, borrowed capital is used it shows existence of Financial Leverage in the capital structure. Investors are paid either interest or/and Dividend. The payment of dividend does not create financial leverage. Only interest which is tax deductible creates existence of Financial Leverage.

The use of borrowed capital in the Capital Structure is used of Financial Leverage. Financial Leverage is known as "Trading on Equity" also.

Indication of Financial Leverage – The degree of Financial Leverage indicates proportion or percentage change in EPS due to change in EBIT.

3.3.2 Formulas

(i) Degree of Financial Leverage = $\frac{\text{EBIT}}{\text{EBT}}$

(DFL)

To calculate pre tax and preference dividend DFL the above stated Formula is used.

OR

(ii) Degree of Financial Leverage = $\left(\frac{2.80}{8.20} \times 100 \right)$

(iii) DFL = $\frac{\text{EBIT}}{\text{EBIT} - \text{I} - \frac{\text{Dp}}{(1-1)}}$

To calculate post interest tax and preference dividend DFL the above stated formula is used.

3.3.3 When there can be Financial Leverageb

When degree of Financial Leverage is >1, there can be Financial Leverage. If DFL = 1, it indicates there is not Financial Leverage, it means there is no interest cost (borrowed capital) in capital structure, only owners funds exist.

From the given illustration Financial Leverage will be calculated as follows:

Firm X :

Pre Tax and preference dividend DFL will be calculated

$$DFL = \frac{EBIT}{EBT} \quad \frac{2,40,000}{1,80,000} = 1.33$$

The application of second formula is based on following formula. Post interest, Tax and preference dividend DFL will be calculated as follows:

$$DFL = \frac{EBIT}{EBIT - I - \frac{Dp}{(1-1)}} = \frac{2,40,000}{2,40,000 - \frac{30,000}{(1-0.30)}}$$

$$= \frac{2,40,000}{2,40,000 - 1,02,857} = \frac{2,40,000}{1,37,143} = 1.75$$

	R
Assume EBIT of next year is	2,64,000
Less : Interest	60,000
EBIT	2,04,000
Less : Tax 30%	61,200
EAT	1,42,800
Less: Preference Share Dividend	30,000
Earning for Equity share holders	1,12,800
÷ No. of Equity shares	10,000
EPS	11.28

Increase in EBIT & EPS

	EBIT	EPS
NEW	2,64,000	11.28
OLD	$\frac{2,40,000}{2,40,000}$	$\frac{9.60}{1.68}$
In %	10%	17.5%

$$DFL = \frac{17.5\%}{10\%} = 1.75$$

Note: - Under both the formulas DFL would remain same. But for use of Second formula, additional information is required.

Firm Y:-

Pre tax and preference dividend DFL will be calculated as follows:-

$$DFL = \frac{EBIT}{EBT} \frac{2,00,000}{1,60,000} = 1.25$$

The second formula to determine DFL is $\frac{\% \text{ Change in EPS}}{\% \text{ Change in EBIT}}$

The application of second formula is based on following formula.

Post Interest, Tax and Preference dividend DFL will be calculated as follows:

$$DFL = \frac{EBIT}{EBIT - I - \frac{PD}{(1-t)}} \qquad \frac{2,00,0000}{2,00,000 - 40,000 - \frac{30,000}{(1-1.30)}}$$

$$= \frac{2,00,0000}{2,00,000 - 82,857} = \frac{2,00,0000}{1,17,143} = 1.71$$

	R
Assume EBIT of next year is	2,30,000
Less : Interest	40,000
EBIT	1,90,000
Less : Tax 30%	57,000
EAT	1,33,000
Less: Preference Share Dividend	30,000
Earning for Equity share holders	1,03,000
÷ No. of Equity shares	10,000
= EPS	10.30

Increase in EBIT and EPS

	EBIT	EPS
NEW	2,30,000	10.30
OLD	$\frac{2,00,000}{30,000}$	$\frac{8.20}{2.10}$
In %	15%	25.61%

$$DFL = \frac{25.61\%}{15\%} = 1.71$$

3.3.4 What is indicated by Financial Leverage.

DFL explains impact of changes in EBIT on EPS. In case of firm X and firm Y DFL is 1.75 and 1.71 respectively. If EBIT is increased by 1% EPS of firm X and firm Y would increase by 1.75% and 1.71% respectively. If EBIT is increase by 20% in this case EPS of firm X and firm Y would be increase by 35% (1.75% x 20%) and 34.2% (1.71 x 20%) respectively.

Let us confirm this impact

Particulars	Firm X	Firm Y
EBIT (OLD)	2,40,000	2,00,000
Add: 20% increase	48,000	40,000
NEW EBIT	2,88,000	2,40,000
Less: Interest	60,000	40,000
EBT	2,28,000	2,00,000
Less: Tax 30%	68,400	60,000
EAT	1,59,600	1,40,000
Less: Preference Share Dividend	30,000	30,000
Earnings for Equity Share Holders	1,29,600	1,10,000
÷ No. of Equity Shares	10,000	10,000
NEW EPS	12.96	11.00
- OLD EPS	9.60	8.20
Increase in EPS	$\left(\frac{3.36}{9.60}\times 100\right)$	$\left(\frac{2.80}{8.20}\times 100\right)$
	35%	34.14%

3.3.5 Risk is associated with Financial Leverage.

Financial risk is associated with Financial Leverage. There is positive relation between Financial Leverage and Financial risk. Financial risk is based on size of Financial Leverage and size of Financial Leverage is based on size interest to be paid for borrowed capital. Higher the amount of interest, higher the degree of Financial Leverage and consequently higher the financial risk.

But at the same time risk and return also have positive relation. Higher the risk, higher the return.

3.3.6 Component of capital structure which brings higher degree of Financial Leverage.

Higher interest cost (which is known as fixed financial cost) is responsible for higher degree of financial leverage.

Explanation :

In illustration, information about two firms is given. Both firms have uniform sales, variable cost, contribution but their interest cost is different.

Due to different interest cost (firm X b 60,000 and firm Y b 40,000), So DFL is also different i.e. 1.75 and 1.71 for firm X and firm Y respectively.

Here firm X is more riskier than firm Y, because DFL of firm X is higher than firm Y and i.e. 1.75 and 1.71 respectively.

But at the same time due to higher risk the return of firm X will be higher than firm Y. Here when EBIT is increased by 20%, EPS of firm X is increased by 35% and of form Y is increased by 34.14%.

Check Your Progress – 2

1) Financial Leverage is determined with the help of _____
   (a) Interest
   (b) Operating fixed cost
2) Financial Leverage is associated with _____
   (a) Capital structure
   (b) Cost structure

3) _____is component of financial leverage.

(a) Interest

(b) Dividend

4) Financial Leverage explains the changes in _____on changes in _____

(a) EBIT, EPS

(b) EPS, EBIT

5) Preference Share dividend applied in computation of _____

(a) Operating Leverage

(b) Financial Leverage

3.4 Total Leverage

3.4.1 Meaning:-

Total Leverage is multiplication of operating leverage and financial leverage. Total leverage explains total risk i.e. operating and financial risk.

Indication of Leverage: The degree of total leverage indicates proportion or percentage change in EPS due to change in sales.

3.4.2 Formulas

(i) Degree of Total Leverage = DOL × DFL

(DTL)

(ii) $$DTL = \frac{Contribution}{Contribution - OF - I - \left[\frac{(Dp)}{1-t}\right]}$$

Where contribution = Sales value – Total variable cost

OF = Operating Fixed Cost

I = Interest

Dp = Preference share dividend

E = Income tax rate

DTL = DOL × DFL

Firm X	Firm Y
1.5	1.8
x 1.75	x 1.71
2.625	3.078

OR

$$DTL = \frac{Contribution}{Contribution - OF - I - \left[\frac{(Dp)}{1-t}\right]}$$

Firm X	Firm Y
$\frac{3,60,000}{3,60,000-1,20,000-60,000-\left[\frac{30,000}{1-.30}\right]}$	$\frac{3,60,000}{3,60,000-1,20,000-60,000-\left[\frac{30,000}{1-.30}\right]}$
$\frac{3,60,000}{3,60,000-2,22,857}$	$\frac{3,60,000}{3,60,000-2,42,857}$
$\frac{3,60,000}{1,37,143}$	$\frac{3,60,000}{1,17,143}$
2.625	3.078

3.4.3 What is included by Total Leverage.

DTL explains impact of changes in sales on EPS. In case of firm X and firm Y DTL: is 2.625 and 3.078 respectively. If sales is increased by 1% EPS of firm X and firm Y would increase by 2.625% and 3.078% respectively. If sales is increased by 10% in this case EPS of firm x and firm Y would increase by 26.25% (2.625% x 10%) and 30.78% (3.078% x 10%) respectively.

Let us confirm this impact

Particulars	Firm X	Firm Y
Sales	6,00,000	6,00,000
Add: 10% increase	60,000	60,000
NEW sales	6,60,000	6,60,000
Less: Variable Cost	2,64,000	2,64,000
Contribution	3,96,000	3,96,000
Less: Operating Fixed Cost	1,20,000	1,60,000
EBIT	2,76,000	2,36,000
Less: Interest	60,000	40,000
EBT	2,16,000	1,96,000
Less: Tax 30%	64,800	58,800
EAT	1,51,200	1,37,200
Less: Preference Dividend	30,000	30,000
Eaming for Equity share holders	1,21,200	1,07,200
÷ No of Equity Shares	10,000	10,000
NEW EPS	12.12	10.72
Less: OLD EPS	9.60	8.20
Increase in EPS	$\left(\frac{2.52}{9.60}\times 100\right)$	$\left(\frac{2.52}{8.20}\times 100\right)$
Increase in EPs in %	26.25	30.7

3.4.4 Risk is associated with Total Leverage.

Total risk is associated with total leverage. There is positive relation between Total Leverage and total risk. Total risk is based on size of Operating and Financial Leverage. Higher the size of Total Leverage, higher the total risk.

But at the same time risk and return also have positive relation. Higher the risk higher the return.

Explanation:-

In the illustration, information about two firms is given. Both the firms have uniform sales, variable cost and contribution. But their operating fixed and interest – costs are different.

Due to different operating fixed cost and interest cost, their DTL are different.

Here firm Y is more riskier than firm X, because DTL of firm Y is 3.078 and of X firm is 2.625. But at the same due to 10% increase in sales EPS of X firm is increased to 26.25%. While that of Y firm is increased to 30.78%. So due to higher risk Y received higher return.

Check Your Progress – 3

(1) Total Leverage is _____of operating leverage and Financial Leverage.

(a) Multiplication

(b) Addition

(2) Total Leverage gives _____

(a) Financial Risk

(b) Total Risk

(3) There is _____relation between total leverage and total risk

(a) Negative

(b) Positive

3.5 Let us Sum up

In this unit we studied meaning of different leverages and their impact.

The role of leverage is to accelerate the return for investors, if factors are found to be favourable. Three types of leverages are covered in this unit namely Operating Leverage, Financial Leverage and Total Leverage. The specific risk is associated with each leverage. Operating risk is associated with operating leverage. Financial risk is associated with financial leverage while total risk is associated with total leverage.

We studied the impact of each leverage on return. Any change in sales is reflected in EBIT and this reflection is explained by operating leverage. Any change in EBIT is reflected in EPS and this reflection is explained by financial leverage while any change in sales is reflected in EPS and this reflection is explained by total leverage.

The concept of risk and return is also studied in the context of leverage. High degree of all leverages always brings high risk but at the same time high return also.

After having proper reading of this unit reader must be able to understand concept of all types of activity leverage and risk associated with them.

3.6 Answers for check your progress

Check Your Progress – 1

Answers: - (1-a) (2-b) (3-a) (4-a) (5-b)

Check Your Progress – 2

Answers: - (1-a) (2-a) (3-a) (4-a) (5-b)

Check Your Progress – 3

Answers: - (1-a) (2-b) (3-b)

3.7 Glossary

1. **Operating risk :** Operating risk is known as business risk. It arises due to fixed overhead in cost structure.
2. **Financial Risk :** It arises due to change of interest in use of borrowed capital
3. **Trading on Equity:** it is synonyms of financial leverage. When debt component is used in the capital structure to enhance the return to equity share holders is called trading on equity.

3.8 Assignment

State different leverages which are used to accelerate the return of investors.

3.9 Activities

Differentiate between operating leverage and financial leverage.

3.10 Case Study

Obtain annual report of any two companies listed on Bombay Stock Exchange, calculate their financial leverage and undertake comparison of calculated financial leverage.

3.11 Further Readings

1. Financial Management – Ravi M Kishore
2. Financial Management – I.M. Pandey

BLOCK SUMMARY

After reading this the readers would have got the sufficient idea about hte capital and various concepts that are associated with capital and its structure. The following topics were studied in this block.

The first unit of the block covered the topic cost of capital in detail. It also explained the readers about the various elements of cost of capital. Discussion was also be made on opportunity cost. The writer tried his best to explain the topics in most easy language and even kept the content of the book concise but understandable. Here he made a detailed study on the various factors that affects the capital structure i.e whether the capital should contain equity or debt or in what ratio the equity and debtbe maintained. Later in the unit various theories of capital structure shall also be discussed in detail. These capital structure theories are considered to be very important in understanding the various concepts of capital and its cost. To accelarate the refum of the firm leverage plays vital role. In unit 3 analysis of leverages is undertaken. Three types of leverages - operating, financial and combined leverages are explained.

After going through this block the students would have got the sufficient exposure to various concepts associated with capital structure and its theories.

Block Assignment

Short Answer Questions

a. Cost of equity capital.
b. Difference between book value rate and Market value rate.
c. Opportunity cost of capital.
d. Traditional View.
e. Three approaches of M-M.
f. Debt-equity ratio' s importance in capital structure.
g. Risk associated with leverage.

Long Answer Questions

1. Discuss the Modigliani miller approach in detail.
2. What do you understand by optimal capital structure.
3. Explain different leverages with illustrations.

Enrolment No.

1. How many hours did you need for studying the unitsb

Unit No	1	2	3
Nos. of Hrs			

2.

Items	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	☐	☐	☐	☐	_____
Language and Style	☐	☐	☐	☐	_____
Illustration used (Diagram, tables etc)	☐	☐	☐	☐	_____
Conceptual Clarity	☐	☐	☐	☐	_____
Check your progress Quest	☐	☐	☐	☐	_____
Feed back to CYP Question	☐	☐	☐	☐	_____

Please give your reactions to the following items based on your reading of the block:

3. Any Other Comments

……

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FINANCIAL MANAGEMENT

BLOCK-3 WORKING CAPITAL MANAGEMENT AND INVESTMENT

UNIT 1

WORKING CAPITAL MANAGEMENT-I

UNIT 2

WORKING CAPITAL MANAGEMENT-II

UNIT 3

INVESTMENTS AND FUND

BLOCK 3: WORKING CAPITAL MANAGEMENT AND INVESTMENT

Block Introduction

Finance, as already discussed is one of the most important parts of any business unit, without which none of the business can survive. The capital required may be of several types. The capital required may be of short term need or for long term need. The capital required for short term is required for the day to day running of business where as capital for long term is required for the acquisition of long term assets. Capital for short duration is required for the purpose of meeting current liabilities against creditors for stock, salary to employees etc. The capital for short duration is known as working capital and has been discussed here in verydetail.

In this block the whole content was divided into four units Unit 1 and 2 talks about the working capital. These units have discussed in detail about working capital. It discusses about Meaning and Definition of Working Capital, Types of Working Capital, Factors Affecting Working Capital / Determinants of Working Capital, Operating Working Capital Cycle, Working Capital Requirements, Estimating Working Capital Needs and Financing Current Assets. On the other hand unit 2 discusses about in detail about Inventory Management, Purpose of holding inventories, Types of Inventories, Inventory Management Techniques, Pricing of inventories, Receivables Management, Purpose of receivables, Cost of maintaining receivables, Monitoring Receivable, Cash Management, Reasons for holding cash, Factors for efficient cash management. In the unit 3rd discussed about the capital budgeting and its importance in a organisation it discusses about Capital Budgeting, Principles of Capital Budgeting, Kinds of Capital Budgeting Proposals, Kinds of Capital Budgeting Decisions, Capital Budgeting Techniques, Estimation of Cash flow for new Projects, Sources of long Term Funds.

This unit is going to be of great help for the readers in understanding the concepts relating to working capital.

Block Objective

After learning this block, you will be able to understand:

- Working Capital Cycle.
- Factors Which Influence Working Capital Need In Organisation.
- Inventory Management.
- Receivables Management.
- Cash ManagementTechniques.
- Inventory
- Various Techniques of Inventory Management.
- Capital budgeting.
- Cash Flow And Accounting Profit
- NPV And The Internal Rate Of Return(IRR)

Block Structure

Unit 1

WORKING CAPITAL MANAGEMENT - I

: UNIT STRUCTURE :

1.0 Learning Objectives

After learning this unit, you will be able to understand:

- How working capital cycle operates?
- Factors which influence working capital requirements.
- Calculate average working capital requirements.
- Enumerate components of capital structure.
- Measure business risk, financial risk and total risk through leverage.

1.1 Introduction

Working capital is significant in financial management due to the fact that it plays an important role in keeping the wheels of a business enterprise running. It may be regarded as lifeblood of a business. It is concerned with short term financial decisions. Its effective provision can do much to ensure the success of a business, while its inefficient management can lead not only to loss of profits but also to the ultimate downfall of promising concept. A study of working capital is of major importance to internal and external analysis because of its close relationship with day-to-day operations of a business.

Working capital management includes management of various components of current assets as well as current liabilities.

A firm invests a part of its permanent capital in fixed assets and keeps a part of it for working capital i.e. for meeting the day to day requirements. The requirements of working capital varies from firm to firm depending upon the nature of business, production policy, market conditions, seasonality of operations, conditions of supply etc. Working capital management if carried out effectively, efficiently and consistently will assure the health of an organization.

1.2 Meaning and Definition of Working Capital

In accounting, W. C. is the difference between the inflow and outflow of funds. It is the net cash inflow.

W.C. is defined as the excess of current assets over its current liabilities and provision. Current assets are those assets which will be converted into cash with the current account period or within the next year as a result of the ordinary operations of the business.

Efficient working capital management requires that the firms should operate with some amount of Net working capital (NWC), the exact amount varying from firm to firm and depending, among other things, on the nature of industry. The greater the margin by which the current assets cover the short term obligations, the more able it will be to pay its obligations when they become due for payment.

Check your progress 1

1. _____is defined as the excess of current assets over its current liabilities and provision.

   a. Profit

   b. Net profit

2. In accounting, _____ is the difference between the inflow and outflow of funds. It is the net cash inflow.

   a. W. C.

   b. C.W

1.3 Types of Working Capital

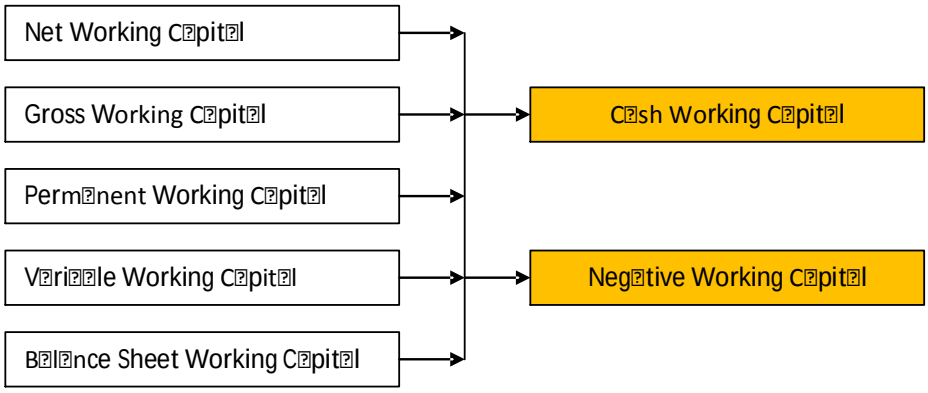

Fig 1.1 Type of Capital

Types of Working Capital

1. Networking Capital

Networking Capital is the difference between current assets and current liabilities. The concept of net working capital enables a firm to determine how much amount is left for operational requirements.

2. Gross Working Capital

Gross working capital is the amount of funds invested in the various components

- Financial Managers are profoundly concerned with current assets:
- Gross working Capital provides the current amount of working capital at the right time;
- It enables a firm to realize the greatest return on its investment;
- It helps in the fixation of various areas of financial responsibility;
- It enables a firm to plan and control funds and to maximize the return on investment.

For these advantages, gross working capital has become a more acceptable concept in financial management.

3. Permanent Working Capital

Permanent Working Capital is the minimum amount of current assets which is needed to conduct a business even during the dullest season of the year. This amount varies from year to year, depending upon the growth of a company and the stage of the business cycle in which it operates. It is the amount of funds required to produce the goods and services which are necessary to satisfy demand at a particular point. It represents the current assets which are required on a continuing basis over the entire year. It is maintained as the medium to carry on operations at any time. Permanent working capital has the following characteristics:

- It is classified on the basis of the time factors;
- It constantly charges from one asset to another and continues to remain in the business process
- Its size increase with the growth of business operations

4. Temporary or Variable Working Capital

It represents the additional assets which are required at different times during the operating year-additional inventory, extra cash, etc. Seasonal working capital is the additional amount of current assets- particularly cash, receivable and inventory which is required during the more active business seasons of the year. It is temporarily invested in current assets and possesses the following characteristics;

- It is not always gainfully employed, though it may change from one asset to another, as permanent working capital does;
- It is particularly suited to business of a seasonal or cyclical nature.

5. Balance sheet working capital

The balance sheet working capital is not which is calculated from the items appearing in the balance sheet. Gross working capital which is represented by the excess of current assets, and net working capital which is represented by the excess of current assets over current liabilities are examples of the balance sheet working capital.

6. Cash working capital

Cash working capital is one which is calculated from the items appearing in the profit and loss accounts of current assets. This concept has the following advantages -

It shows the real flow of money or value at a particular time and is concerned to be the most realistic approach in working capital management. It is the basis of the operation cycle concept which has assumed a great importance in financial management in recent years. The reason is that the cash working capital indicates the adequacy of the cash flow which is an essential pre - requisite of a business.

7. Negative working Capital

Negative working Capital emerges when current liabilities exceed current assets. Such a situation is not absolutely theoretical and occurs when a firm is nearing a crisis of some magnitude.

Check your progress 2

1. _____working capital is the amount of funds invested in the various components.

   a. Net

   b. Gross

2. _____is the difference between current assets and current liabilities.

   a. Marketing Capital

   b. Networking Capital

3. _____is maintained as the medium to carry on operations at any time

   a. Permanent Working Capital

   b. Working Capital

1.4 Factors Determining Working Capital

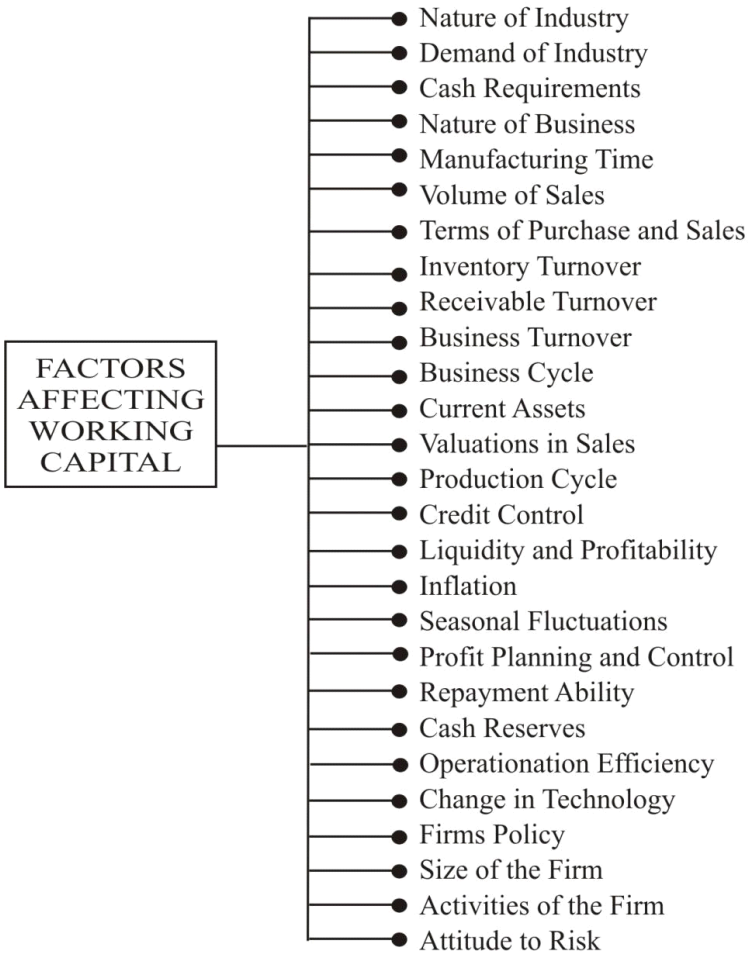

Fig 1.2 Factors Affecting Working Capital

Railroad, with their large fixed investments, appear to have the lowest requirements for current assets. This does not mean that the problems of working capital may be minimized in this field of enterprise, since ready funds are still essential to cover disbursement for wages, interest on funded debt, purchase of materials and supplies, etc. Indeed, under such conditions the working capital position may become even more strategic in character because of its relation to, and control of, the large amount of fixed assets. Thus, one of the outstanding problems of railroad management in recent years has been the maintenance of a current position sufficiently strong to permit vigorous operations. Public utilities like rail roads have large fixed investments which cause the current assets to constitute only arelatively small percentage of the total assets. There is a difference between operating and holding companies, but even then the funds to cover current transactions are minor as compared with those necessary to finance the long term structure.

Industrial concerns, generally, require a large amount of working capital, although it varies from business to business with lack of uniformity characterising each field of enterprise. However, the underlying determinants of the amount are essentially the same as in the earlier groups. Where large amounts of fixed capital are required for operation, working assets May be expected to occupy asmaller niche in the asset structure. For similar reasons,

a rapid turnover of capital (sales divided by total assets) will inevitably means a large proportion of current assets in the case of industries with large fixed investment. One of the primary uses of working capital is its conversion into operation which will normally replace such defections. This means that the flow of a portion of the working capitals circulated through fixed investment and that its recovery is dependent upon the income realized. Where the current assets are relatively more important, a rapid sales turnover is usually found. Often, as in the case of retail concerns, the specific working assets constitute the object of sale and recovery is direct and immediate. In manufacturing enterprises, a large share of working capital is more likely to get converted into finished products; but even here, the potentiality of recovery is not delayed as much as in the case of public utilities and railroads. The need for working capital varies with changes in the volume of business. A considerable proportion of current assets are needed permanently as fixed assets. At the same time, new receivable accumulate and old ones are converted into cash. Cash is utilized in the production process. The following factors determine the amount of working capital;

Nature of Industry: The composition of an asset is a function of the size of a business and the industry to which it belongs. Small companies have smaller proportions of cash, receivables and inventory than large corporations. This difference becomes more marked in large corporations. A public utility, for example, mostly employs fixed assets in its operations, while merchandising department depends generally on inventory and receivables. Needs for working capital are thus determined by the nature of an enterprise.

Demand of Industry: Creditors are interested in the security of loans. They want their obligations to be sufficiently covered. They want the amount of security in assets which are greater than the liability.

Cash Requirements: Cash is one of the current assets which is essential for successful operations of the production cycle. Cash should be adequate and properly utilised. It would be wasteful to hold excessive cash. A minimum level of cash is always required to maintain good credit good credit relations. Richards Osborn has pointed out that cash has a universal liquidity and acceptability. Unlike illiquid assets, its value is clear-cut and definite.

Nature of Business: The nature of business is an important determinant of the level of the working capital. Working capital requirements depend upon the general nature or type of business. They are relatively low in public utility concerns, in which inventories and receivables are rapidly converted into cash. Manufacturing organizations, however, face problems of slow turnover of inventories and receivables, and invest large amount in working capital.

Time: The level of working capital depends upon the time required to manufacture goods. If the time is longer, the size of working capital is greater. Moreover, the amount of working capital depends upon inventory turnover and the unit cost of the goods that are sold. The greater this cost, the bigger is the amount of working capital.

Volume of Sales: This is the most important factor affecting the size and

components of working capital. A firm maintains current assets because they are needed to support the operational activities which result in sales. The volume of sales and size of the working capital are directly related to each other. As the volume of sales increases, there is an increase in the investment of working capital in the cost of operations, in inventories and in receivables.

Terms of purchase and Sales: If the credit terms of purchase are more favourable and those of sales less liberal, less cash will be invested in inventory. With more favourable credit terms, working capital requirements can be reduced. A firm gets more time for payment to creditors or suppliers. A firm which enjoys greater credit with banks needs less working capital.

Inventory Turnover: If the inventory turnover is high, the working capital requirements will be low. With abetter inventory control, a firm is able to reduce its working capital requirements. While attempting this, it should determine the minimum level of stock which it will have to maintain throughout the period of its operations.

Receivable Turnover: It is necessary to have an effective control of receivables. A prompt collection of receivables and good facilities for settling payables result into low working capital requirements.

Business Turnover: The business turnover of the organization directly calls for systematic planning for production. The exploitation of the available business can be achieved only when sufficient raw materials are stored and supplied. Hence Business Turnover willalso influence the working capital.

Business Cycle: Business expands during periods of prosperity and declines during the period of depression. Consequently, more working capital is required during periods of prosperity and less during the periods of depression. During marked upswings of activity, there is usually a need for larger amounts of capital to cover the lag between collection and increased sales and to finance purchases of additional materials to support growing business activity. Moreover, during the recovery and prosperity phase of the business cycle, prices of raw materials and wages tend to rise, requiring additional funds to carry even the same physical volume of business. In the downswing of the cycle, there may be abrief period when collection difficulties and declining sales together cause embarrassment by requiring replenishing of cash. Later, as the depression runs its course, the concern may find that it has a larger amount of working capital on hand than current business volume may justify.

Volume of Current Assets: A decrease in the real value of current assets as compared to their book value reduces the size of the working capital. If the real value of current assets increases, there is an increase in working capital.

Variation of Sales: A seasonal business requires the maximum amount of working capital for a relatively short period of time.

Production Cycle: The time taken to convert raw materials into finished products is referred to as the production cycle or operating cycle. The longer the production cycle, the greater is the requirement of working capital. An utmost care should be taken to shorten the period of the production cycle in order to minimize working capital requirements.

Credit Controls: Credit Controls includes such factors as the volume of credit sales, the terms of credit sales, the collection policy, etc. With a sound credit control policy, it is possible for a firm to improve its cash inflow.

Liquidity and Profitability: If a firm desires to take a greater risk for bigger gains or losses, it reduces the size of its working capital in relation to its sales. If it is interested in improving its liquidity, it increases the level of its working capital. However, this policy is likely to result in a reduction of the sale volume, and, therefore, of profitability. A firm, therefore, should choose between liquidity and profitability and decide about its working capital requirements accordingly.

Inflation: As a result of inflation, size of the working capital is increased in order to make it easier for a firm to achieve abetter cash inflow. To some extent, this factor may be compensated by the rise in selling price during inflation.

Seasonal Fluctuations: Seasonal Fluctuations in sales affect the level of variable working capital. Often, the demand for product may be of a seasonal nature. Yet inventories have got to be purchased during certain season only. The size of the working capital in one period may, therefore, be bigger than that in another.

Profit Planning and Control: The level of working capital is decided by the management in accordance with its policy of profit planning and control. Adequate profit assists in the generation of cash. It makes it possible for the management to plough back a part of its earnings in the business and substantially build up internal financial resources.A firm has to plan for taxation payments, which are an important part of working capital management. Often dividend policy of a corporation may depend upon the amount of cash available to it.

Repayable Ability: A firm's repayment ability determines level of its working capital. The usual practice of a firm is to prepare cash flow projections according to its plans of repayment and to fix working capital levels accordingly.

Cash Reserves: It would be necessary for a firm to maintain some cash reserves to enable it to meet contingent disbursements. This would provide abuffer against shortages in cash flows.

Operational and Financial Efficiency: Working capital turnover is improved with abetter operational and financial efficiency of a firm. With a greater working capital turnover, it may be able to reduce its working capital requirements.

Changes in Technology: Technology developments related to the production-process have a sharp impact on the need for working capital.

Firms Policies: These affect the level of permanent and variable working capital.Changes in credit policy, production policy, etc., are bound to affect the size of working capital.

Size of the Firm: A firm's size, either in terms of its assets or sales, affects its

need for working capital. Bigger firms, with many sources of funds, may need less working capital as compared to their total assets or sales.

Activities of the Firm: A firm's stocking on heavy inventory or selling on easy credit terms calls for a higher level of working capital for it than for selling services or making cash sales.

Attitude of Risk: The greater the amount of working capital, the lower is the risk of liquidity.

Whenever there is current strain, it has to be immediately diagnosed on the basis of the red signals which manifest themselves in the operation. The cause should be ascertained by making thorough study of the components of current assets and current liabilities.

If stock is not moving fast, and if there is an excess inventory build-up, corrective steps should be taken to sell the stock or bring down its level. If the receivables have become sticky, effective recovery steps should be taken to reduce the debts and to increase the collections. Sometimes short-term funds have been used to finance fixed assets, and this creates the current strain. This imbalance in the pattern of financing should be set right by raising long-term funds on the cover of fixed assets so that the current strain may be wiped out. Similarly, if current funds are diverted outside when they are badly required within the firm itself, it would be very difficult to run the business. External diversion may be for the purpose of outside investment, advance to other or allied concerns or may be in the form of drawing from the business or for various other purposes. The situation can improve only if this external diversion is stopped. If the strain is allowed to continue business of involvement in any other business or industry, the consequences may be disastrous. In such a situation, the ability to meet current demands deteriorates; short-term credits are not forthcoming; production is affected; sales decline; cash flow dwindles; income may disappear; and the whole enterprise may get into the red over a period of time.

Check your progress 3

1. The composition of an_____is a function of the size of a business and the industry to which it belongs.

   a. Equity

   b. Asset

2. _____related to the production-process have a sharp impact on the need for working capital.

a. Technology developments

b. Management Development

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1.5 Operating Working Capital Cycle

A new concept which is gaining more importance in recent years is the ?Operating Cycle concept‘ of Working Capital. The operating cycle refers to the average time elapses between the acquisition of raw materials and the final

cash realization. Then the raw materials and stores are issued to the production department. Wages are paid and other expenses are incurred in the process and work-in-process comes into existence. Work-in-process becomes finished goods. Finished goods are sold to customers on credit. In the course of time, these customers pay cash for the goods purchased by them. ?Cash' is retrieved and the cycle is completed. Thus, operating cycle consists of four stages:

- The raw materials and stores inventory stage
- The work- in- progress stage
- The finished goods inventory stage
- The receivable stage

The operating cycle begins with the arrival of the stock, and ends when the cash is received. The cash cycle begins when cash is paid for materials, and ends when cash is collected from receivables.

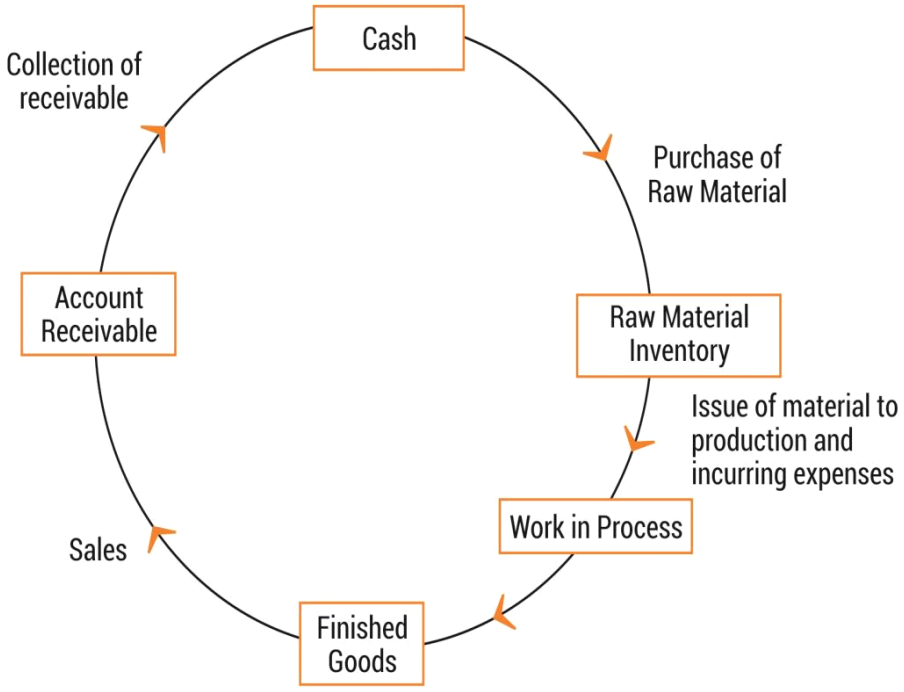

Fig 1.3 Operating working Capital Cycle

Importance of Operating Cycle Concept - The application of operating cycle concept is mainly useful to ascertain the requirement of cash working capital to meet the operating expense of a going concern. This concept is based on the continuity of the flow of value in a business operation.

This is an important concept because the longer the operating cycle, the more working capital funds the firm needs. Management must ensure that this cycle does not become too long. This concept precisely measures the working capital fund requirements, traces its changes and determines the optimum level of working capital requirements.

Check your progress 4

1. The _____refers to the average time elapses between the acquisition of raw materials and the final cash realization.

a. annual cycle

b. operating cycle

2. Wages are paid and other _____are incurred in the process and work-in-process comes into existence.

a. Expenses

b. Saving

Components of operating cycle

Gross Operating cycle: The following components are of gross operating cycle:

1. R = Raw material Storage Period
2. W = Work In Progress Holding Period
3. F = Finished Goods Storage Period
4. D = Debtors Collection Period Allowed

Thus gross Operating cycle = R + W + F+D

Net Operating Cycle = net operating cycle means Gross operating cycle minus Credit period allowed by suppliers (creditors) of goods.

1. R = Raw material Storage Period
2. W = Work In Progress Holding Period
3. F = Finished Goods Storage Period
4. D = Debtors Collection Period Allowed
5. C = Credit Period allowed by suppliers

Thus Net Operating Cycle = R + W + F + D - C

How to calculate components of operating cycle :

The following formulas are to be used for different components to determine operating cycle.

No	Component	Formulas
1	Average Raw Material Storage Period In Days	Average Stock of Raw Material / Average Cost of Raw Material Consumption Per Day
2	Average Work in Process Holding Period in Days	Average Stock of Work in Progress / Average Cost of Work in Process Per Day
3	Average Finished Goods Storage Period In Days	Average Stock of Finished Goods / Average Cost of Goods Produced Per Day
4	Average Debtor's Collection Period in Days	Average Trade Debtors / Average Cost of Credit Sales Per Day
5	Average Creditor's payment Period in Days	Average Trade Creditors / Average Cost of Credit Purchase Per Day
6	Average Time Lag in Payment of expenses in Days	Average Creditors for Expenses/ Average Expense Per Day

How to calculate Number of Operating Cycles in a Year?

The number of Operating Cycle in a year may be calculated as follows:

No of Operating Cycles in a year = No of days in a year / Net Operating cycle

(In days)

Illustration:

From the following information of Shukla LTD calculate: (1) Gross Operating Cycle (2) Net Operating Cycle and (3) No of Operating cycles in a year

No	Particulars	Amount in Rs
1	Raw Material Consumption during the year	60,00,000
2	Average Stock of Raw Material	10,00,000
3	Factory Cost of Goods Produced	1,05,00,000
4	Average stock of W I P	4,37,500
5	Office Cost of Goods Produced	1,14,00,000
6	Average Stock of Finished Goods	9,50,000
7	Average trade Debtors	11,25,000
8	Cost of Credit Sales	90,00,000
9	Average Trade Creditors	5,00,000
10	Expenses for the Year	30,00,000
11	Average Creditors for Expenses	5,00,000
NOTE:	No Working Days in a Year (Assume 360 Days)	

Answer:

No	Component	Formulas	Amount in Rs	Days
1	Average Raw Material Storage Period In Days	Average Stock of Raw Material / Average Cost of Raw Material Consumption Per Day	10,00,000 / (60,00,000 /360)	60
2	Average Work in Process Holding Period in Days	Average Stock of Work in Progress / Average Cost of Work in Process Per Day	4,37,500/(1,05,00,000 /360)	15
3	Average Finished Goods Storage Period In Days	Average Stock of Finished Goods / Average Cost of Goods Produced Per Day	9,50,000 / (1,14,100,000/360)	30
4	Average Debtor's Collection Period in Days	Average Trade Debtors /Average Cost of Credit Sales Per Day	11,25,000 /(90,00,000 /360)	45
5	Average Creditor's payment Period in Days	Average Trade Creditors / Average Cost of Credit Purchase Per Day	5,00,000 / (60,00,000 / 360)	30
6	Average Time Lag in Payment of expenses in Days	Average Creditors for Expenses/ Average Expense Per Day	5,00,000 / (30,00,000 / 360)	60

1) Gross Operating Cycle: R + W + F + D

   60 +15 + 30 + 45 = 150 Days

2) Net Operating Cycle: R + W + F + D-C

   60 + 15 + 30 + 45 - 30 - 60 = 60 Days

3) No of Operating cycles in a year = No of days in a year / Net Operating cycle

   = 360 Days / 60days

   = 6 Operating Cycles

1.6 Working Capital Requirements

Every firm requires at least some amount of working capital, only their working capital requirements are different. The goal of every firm should be to increase the profit of its shareholders. And to achieve this goal, the firm's operations must yield enough returns. Successful sales activity is very essential to earn profit and hence, it is imperative that a firm invests sufficient funds

in its current assets for sales generation. As sales cannot be converted into cash immediately, current assets are required to convert sales into cash.

Working capital is essentially circulating capital; in fact it is often referred to as such. This has been admirably summed up by comparing it with ariver which is there every day, but the water in it is constantly changing.

The required amount of working capital in relation to the fixed capital of a business will vary widely between firms in different industries. For example, a company engaged in the ship-building industry will need a large amount of fixed or long term capital to finance the shipyard, equipment, etc for considerable periods, whereas a jobbing builder will require virtually no fixed assets but instead a reasonably large amount of working capital to finance stocks of parts, amounts owing by customers, etc. If company does not have enough working capital it will soon find its activities restricted. Many firms which seemed to be expanding their activities successfully have faced trouble through insufficient working capital being available to finance this expansion. Under normal conditions a steady increase in working capital indicates a successful business, while a steady decrease would be a danger signal demanding immediate action to remedy the situation

Both in practice and in examinations, the question is often asked:

What will be the working capital requirements to finance this level of activity or that new project? This is a very practical and important problem which may require extensive research and difficult calculations. However, to show the usual requirements in simple form, the following items are tabulated:

- The cost of raw materials, wages and overheads.
- The period during which raw materials will remain in stock before issue to production.
- The period during which the product will be processed through the factory.
- The period during which finished goods will remain in the warehouse.
- The lag in payment to suppliers of raw materials and service.
- The lag in payment to employees.
- The lag in payment by debtors.
- Frequently an amount is allowed to cover contingencies, e.g. 10% might be added to the total amount.

Most of these points will be included in a computation of working capital requirements. For example, the period during which stocks of finished goods stay in the warehouse can only be an average figure, but by careful observation it should be possible to make a reasonable assessment. This is the reason for allowing an amount to cover contingencies: it is hoped that this figure might cover any inaccuracies in calculation.

Check your progress 5

1. The required amount of _____in relation to the fixed capital of a business will vary widely between firms in different industries.

a. capital

b. working capital

2. _____is essentially circulating capital; in fact it is often referred to as such.

a. Market Capital

b. Working capital

1.7 Estimating Working Capital Needs and Financing Current Assets

Operating cycle is the most appropriate method for computing the working capital requirements of any company. However, methods other than operating cycle for computing a firm's working capital include:

- Estimation of a firm's working capital requirements on the grounds of its current assets' average holding period and then relating them to the company's costs based on past experiences. Operating cycle approach forms the basis of this method. In order to use this method for estimating working capital needs, one can make certain assumptions such as there is a supply of raw materials and semi finished and finished goods for one month.
- Assuming that the current assets vary with sales, the ratio of sales can be used as a method for estimating the working capital of a firm. Here, it can be assumed that the annual sales are anywhere between 25-30 %.
- Working capital requirement can also be estimated as a ratio of fixed investments.

One can assume the firm's capital investment to be 10-20% in order to use this method.

As the second approach is clearly dependant on how accurately the sales are estimated, this method is less reliable. Likewise, the third method is highly dependent on the investment estimates. If the investments are not estimated properly, then it will affect the estimation of working capital needs using this method and hence, this method is not used generally.

Various factors like the accurate sales and investment forecasting, alterations in operations etc. should be considered while estimating a firm's working capital requirements. Also, other factors like the company's production cycle, its collection policies etc. should also be taken into consideration.

Financing Current Assets

The various policies for financing current assets include

- Long-term financing can be obtained by means of debentures, ordinary as well as preference share capital, long term loans coming from banks and financial institutions etc.
- Short-term financing can be sourced in the form of working capital coming from banks, commercial papers, public deposits etc. Short-term

finance is obtained from short-term suppliers in money market as well as from banks and is generally for a period less than one year.

The automatic funds arising in day-to-day business are referred to as Spontaneous financing. Outstanding expenses, trade credit etc. are some of the examples of spontaneous financing. A firm is expected to use this source of financing to the fullest extent as there are no explicit costs associated with this type of financing.

Check your progress 6

1. Operating cycle is the most appropriate method for computing the _____requirements of any company.

   a. working capital

   b. asset

2. _____requirement can also be estimated as a ratio of fixed investments.

   a. Working capital

   b. Estimate capital

1.8 Strategies in Working Capital Management

So far the banks were the sole source of funds for working capital needs of business sector. At present more finance options are available to a Finance Manager to see the operations of his firm goes smoothly. Depending on the risk exposure of business, the following strategies are evolved to manage the working capital.

Conservative Approach

A conservative strategy suggests not taking any risk in working capital management and carrying high levels of current assets in relation to sales. Surplus current assets enable the firm to absorb sudden variations in sales, production plans, and procurement time without disrupting production plans. It requires to maintain a high level of working capital and should be financed by long-term funds like share capital or long-term debt. Availability of sufficient working capital will enable the smooth operational activities of the firm and there would be no stoppages of production for want of raw materials, consumables. Sufficient stocks of finished goods are maintained to meet the market fluctuations. The higher liquidity levels reduce the risk of insolvency. But lower risk translates into lower return. Large investments in current assets lead to higher interest and carrying costs and encouragement for inefficiency. But conservative policy will enable the firm to absorb day to day business risk. It assures continuous flow of operations and eliminates worry about recurring obligations. Under this strategy, long-term financing covers more than the total requirement for working capital. The excess cash is invested in short-term marketable securities and in need these securities are sold-off in the market to meet the urgent requirements of working capital.

Financing Strategy

Long-term funds = Fixed assets + Total permanent current assets + Part of

temporary current assets

Short-term funds = Part of temporary current assets

Aggressive Approach

Under this approach current assets are maintained just to meet the current liabilities keeping any cushion for the variations in working capital needs. The core working capital is financed by long-term sources of capital and seasonal variations are met through short-term borrowings. Adoption of this strategy will minimize the investment in net working capital and ultimately it lowers the cost of financing working capital. The main drawback of this strategy is that it necessitates frequent financing and also increases risk as the firm is vulnerable to sudden shocks. A conservative current asset financing strategy would go for more long-term finance which reduces the risk of uncertainty associated with frequent refinancing. The price of this strategy is higher financing costs since long-term rates will normally exceed short term rates. But when aggressive strategy is adopted, sometimes the firm runs into mismatches and defaults. It is the cardinal principle of corporate finance that long-term assets should be financed by long-term sources and short-term assets are a mix of long and short-term sources.

Financing Strategy

Long-term funds = Fixed assets + Part of permanent current assets

Short-term funds = Part of permanent current assets + Total temporary current assets

Matching Approach

Under matching approach to financing working capital requirements of a firm, each asset in the balance sheet assets side would be offset with the financing instrument of the same approximate maturity. The basic objective of this method of financing is that the permanent component of current assets,and fixed assets would be met with long-term funds and the short-term or seasonal variations in current assets would be financed with short-term debt. If the long-terra funds are used for short-term needs of the firm it can identify and take steps to correct the mismatch in financing. Efficient working capital management techniques are those that compress the operating cycle. The length of the operating cycle is equal to the sum of the lengths of the inventory period and the receivables period. Just-in-time inventory management technique reduces carrying costs by slashing the time that goods are parked as inventories. To shorten the receivables period without necessarily reducing the credit period, corporate can offer trade discounts for prompt payment. This strategy if also called as ‘hedging approach’.

Financing Strategy

Long-term funds = Fixed assets + Total permanent current assets Short-term funds = Total temporary current assets]

Zero Working Capital Approach

This is one of the latest trends in working capital management. The idea is to have zero working capital i.e., at all times the current assets shall equal the current liabilities. Excess investment in current assets is avoided and firm

meets its current liabilities out of the matching current assets. As current ratio is 1 and the quick ratio is below 1, there may be apprehensions about the liquidity, but if all current assets are performing and are accounted at their realizable values, these fears are misplaced. The firm saves opportunity cost on excess investments in current assets and as bank cash credit limits are linked to the inventory levels, interest costs are also saved. There would be a self-imposed financial discipline on the firm to manage their activities within their current liabilities and current assets and there may not be a tendency to over borrow or divert funds. Zero working capital also ensure a smooth and uninterrupted working capital cycle, and it would pressurise the Financial Management to improve the quality of the current assets at all times to keep them 100% realizable. There would also be a constant displacement in the current liabilities and the possibility of having over dues may diminish. The tendency to postpone current handily payments has to be curbed and working casual always maintained at zero. Zero working capital would call for a fine balancing act in Financial Management, and the success in this endeavour would get reflected in healthier bottom lines.

Total Current Assets = Total Current Liabilities or Total Current Assets-Total Current Liabilities = Zero

Working Capital Policies

The degree of current assets that a company employs for achieving a desired level of sales is manifested in working capital folio. In practice, the business concerns follow three forms of working capital policies which are discussed in brief as follows:

Restricted Policy: It involves the rigid estimation of working capital to the requirements of the concern and then forcing it to adhere to the estimate. Deviations from the estimate are not allowed and the estimate will not provide for any contingencies or for any unexpected events.

Relaxed Policy: It involves the allowing of sufficient cushion for fluctuations in kinds of requirement for financing various items of working capital. The estimate is made after taking into account the provision for contingencies and unexpected events.

Moderate Policy The relationship of sales and corresponding level of investment in current assets is shown in figure.

1.9 Estimation working capital :

Illustration 1

From the following details you are required to make an assessment of the average capital requirement of Hindustan Ltd.

Particulars	Average period of credit	Estimate for the 1st year (₹)
Purchase of material	6 weeks	26,00,000
Wages	1½ Weeks	19,50,000
Overheads:		
Rent, Rates, etc	6 months	1,00,000
Salaries	1 month	8,00,000
Other overheads	2 months	7,50,000
Sales cash		2,00,000
Credit sales	2 months	60,00,000
Average amount of stocks and work-in-progress		4,00,000
Average amount of un drawn profit		3,00,000

It is assumed that all expenses and income were made at even rate for the year Assessment of Average amount of working capital Requirement

Current Assets			
Stock and work-in-process			4,00,000
Debtor	(₹ 60,00,000 × 2/12)		10,00,000
		(a)	14,00,000
Current Liabilities:			
Lag in payments:			
Purchases	(₹ 26,00,000 × 6/52)		3,00,000
Wages	(₹ 19,50,000 × 1.5/52)		56,250
Rent	(₹ 1,00,000 × 6/12)		50,000
Salaries	(₹ 8,00,000 × 1/12)		66,667
Other overheads	(₹ 7,50,000 × 2/12)		1,25,000
		(b)	5,97,917
Total Working Capital		(a) – (b)	8,02,083
Less: Average amount of un drawn profit			3,00,000
Net Working Capital Required			5,02,083

Illustration 2

Estalla Garment Co. Ltd is a famous manufacturer and exporter of garments to the European countries. The Finance Manager of the company is preparing the working capital forecast for the next year. After carefully screening the entire document he collected the following information -

Production during the previous year was 15,00,000 units. The same level of activity is intended to be maintained during the current year. The expected ratios of cost to selling price are:

Raw material 40%

Direct wages 20%

Overheads 20%

The raw materials ordinarily remain in stores for 3 months before production. Every unit of production remains in the process for 2 months and is assumed to be consisting of 100% raw material, wages and overheads. Finished goods remain in warehouse for 3 months. Credit allowed by the creditors is a month from the date of the delivery of raw material and credit given to debtors is 3 months from the date of dispatch.

Estimated balance of cash to be held R 2, 00,000

Lag in payment of wages 1/2 month

Lag in payment of expenses 1/2 month

Selling price is R 10 per unit. Both production and sales are in a regular cycle.You are required to make a provision of 1.0% for contingency (except cash).Relevant assumptions may be made. You have recently joined the company as an Assistant Finance Manager. The job of preparing the forecast statement has been given to you. You are required to prepare the forecast statement. The Finance Manager is particularly interested in applying the quantitative techniques for forecasting the working capital needs of the company.

Answer:

Monthly production = 15,00,000 Units /12 Months = 1,25,000 Units

Classification of selling price:

Selling price Rs.	10
Direct Material 40% of selling price Rs	4
Direct Labour 20% of selling price Rs	2
Overheads 20% of selling price Rs	2
Total cost Rs	8
Profit	2

Statement of working capital requirement

A	**Current Assets:**	**Rs**	**Rs**
	Cash		2,00,000
	Direct Material 1,25,000 * 3 Months * Rs 4		15,00,00
	Work in process: Direct Material 1,25,000 * 2 Months * Rs 4 * 100% completed Direct Labour 1,25,000 * 2 Months * Rs 2 * 50% completed Overheads 1,25,000 * 2 Months * Rs 2 * 50%	10,00,000 5,00,000	20,00,000
	Finished Goods 1,25,000 * 3 Months * Rs 8		30,00,00
	Debtors 1,25,000 * 3 Months * Rs 8		30,00,00
			97,00,00
B	Current Liabilities:		
	Creditors of Goods 1,25,000 1 Month * Rs 4	5,00,000	
	Wages 1,25,000 * $^1/_2$ Month Rs 2	1,25,000	
	Overheads 1,25,000 * $^1/_2$ Month Rs 2	1,25,000	7,00,000
C	A - B Net Working Capital		97,00,00

Illustration : 3

The following information is obtained from the records of X LTD. The working capacity of the company is 1,56,000 units. You are asked to prepare statement of working capital.

Particulars	Rs. Per unit
Raw material	90
Direct Labour	40
Overheads	75
Cost Per unit	205
Profit	60
Selling Price	265

Additional Information:

a) Raw material are in stock on average of one month.

b) Materials are in process, on average 2 weeks. From the view point of material it is 100% completed and from the view point of labour and overheads it is completed by 50%.

c) Finished goods are in stock, on average one month.

d) Credit allowed by suppliers - One month.

e) Time lag in payment from debtors - 2 months.

f) Lag in payment of wages-1.5 weeks.

g) Lag in payment of overheads - one month.

20% sales are on cash basis. Cash in hand and bank is expected to be Rs. 60,000. It is to be assumed that production is carried on evenly throughout the year. Wages and overhead accrue similarly and a time period of 4 weeks is equivalent to a month.

Answer: Working Note :

No	Components of working capital	Rs	Rs.
1	Raw Material l,56,000/52Weeks * 4weeks * Rs		10,50,000
2	Work In Process: l,56,000/52Weeks * 2 Weeks = 6000 Units Raw Material (6000 Units* Rs 90) Direct Labour (6000 Units* Rs 40*0.5 Week) Overheads (6000Units * Rs75* 0.5 Week)	 5,40,000 1,20,000 2,25,000	8,85,000
3	Finished Goods: 1,56,000 Units/52Weeks *4Weeks Rs 205		24,60,000
4	Debtors: 1,56,000 Units /52 Weeks * 8Weeks * Rs 205 * 80/100		39,36,000
5	Creditors: 1,56,000 units/52 weeks * 4 weeks		10,80,000
6	Wages 1,56,000 units/52 weeks *1.5 weeks * Rs		1,80,000
7	Expenses: 1,56,000 units/52 weeks *4 weeks *Rs		9,00,000

Statement of working capital requirement

Particulars	Rs	Rs
(A) Current assets:		
Cash in hand and cash at bank		60,000
Stock in hand: Raw material	10,80,000	
Work in Process	8,85,000	
Finished goods	24,60,000	44,25,000
Sundry debtors		39,36,000
		84,21,000
(B) Current Liabilities:		
Sundry Creditors		10,80,000
Wages payable		1,80,000
Expenses payable		9,00,000
		21,60,000
(C) (A) - (B) Net Working		**62,61,000**

Illustration : 4

Prepare statement of working capital requirement from the following information:

Particulars	Period	Amount (Rs)
Purchased of Raw Material	6 Weeks	13,00,000
Wages	1.5 Weeks	9,75,000
Overheads: Rent	6 Months	50,000
Salaries	1 Month	4,00,000
Other overheads	2 Months	3,75,000
Sales Cash		1,00,000
Credit Sales	2 Months	30,00,000
Average amount of stocks and work in process		2,00,000

Note: It is assumed that all expenses and income were made at even rate for the year. Statement of working capital requirement

Particulars	Rs.
(A) Current Assets:	
Stock and work in process	2,00,000
Debtors (Rs 30,00,000 *2/12)	5,00,000
	7,00,000
(B) Current liabilities:	
Purchases (Rs. 13,00,000 *6/52)	1,50,000
Wages (Rs. 9,75,000 *1.5/52)	28,125
Rent (Rs 50,000 *6/12)	25,000
Salaries(Rs.4,00,000*l/12)	33,333
Other Overheads (Rs. 3,75,000*2/12)	62,500
	2,98,958
(C) = (A) - (B) Net Working Capital	**4,01,042**

Check your progress 8

1. In simple words, _____ is a force applied at a particular point to get the desired result.

   a. Asset

   b. Leverage

2. _____is a tool with which a financial manager can maximize the return to the equity shareholders

   a. Financial leverage

   b. management

1.10 Let Us Sum Up

In this unit we have discussed the importance of working capital in detail.

In this unit we studied that the working capital is circulating capital. In healthy human body proper circulation of blood is necessary, similarly in healthy business adequate circulating capital is necessary. Working capital requirements vary from industry to industry.Capital structure decision lead either to high gearing or low gearing.We even had a discussion on business risk and studied that business faces business risk which is measured by operating leverages. It also faces financial risk if it borrows on long term basis this is measured by financial leverages. We eve studied about working capital management and studied that it includes management of various components of current assets as well as current liabilities. The various types of working capital were also discussed over here.

There are different policies for financing current assets. Types of working capital include Net working Capital, Gross Working Capital, Permanent Working Capital, Temporary or Variable Working Capital, Balance sheet working capital, Cash working capital and Negative working Capital.We even discussed the Factors determining working capital and studied that these factors include Nature of Industry, Demand of Industry, Cash Requirements, Nature of Business, Time, Volume of Sales, Terms of purchase and Sales, Inventory Turnover, Receivable Turnover, Business Turnover, Business Cycle, Volume of Current Assets, Variation of Sales, Production Cycle, Credit Controls, Liquidity and Profitability, Inflation, Seasonal Fluctuations, Profit Planning and Control, Repayable Ability, Cash Reserves etc. We even studied the operating cycle and studied that operating cycle consists of four stages: The raw materials and stores inventory stage, the work- in- progress stage, the finished goods inventory stage and the receivable stage. There are some internal, external and general factors which affect the capital structure decisions. We also covered the concept of leverages and its types – Operating, Financial and combined leverage.

This unit is going to be of great help for the students in understanding the concept of working capital and various other concepts associated with it.

1.11 Answers for Check Your Progress

Check your progress 1

Answers: (1-b), (2-a)

Check your progress 2

Answers: (1-b), (2-b), (3-a)

Check your progress 3

Answers: (1-b), (2-a)

Check your progress 4

Answers: (1-b), (2-a),

Check your progress 5

Answers: (1-b), (2-b)

Check your progress 6

Answers: (1-a), (2-a)

Check your progress 7

Answers: (1-b), (2-a)

Check your progress 8

Answers: (1-b), (2-a)

1.12 Glossary

1. **Working Capital** -A firm's investment in short-term assets—cash, marketable securities, inventory, and accounts receivable.

1.13 Assignment

Explain the concept of leverage and its types.

1.14 Activities

What are the various factors that will affect the requirement of working capital ?

1.15 Case Study

Visit a manufacturing company in your city and understand the working capital management of the company.

1.16 Further Readings

1. Financial Management - R V Kulkarni
2. Financial Management - Prof. Dr. Mahesh A. Kulkarni
3. Financial Management – Ravi M. Kishore
4. Management Accounting for T.Y. B.Com. By Chopda Chaudhary
5. Financial Management - ICFAI

Unit 2

WORKING CAPITAL MANAGEMENT - II

: UNIT STRUCTURE :

2.0 Learning Objectives

After learning this unit, you will be able to understand:

- Discuss inventory management
- Explain Receivables management
- Practise cash management techniques
- Know the purpose of inventory
- List inventory management techniques

2.1 Introduction

Inventories form a major chunk of current assets of a company and huge amount of funds are often invested in them. Hence, it is extremely important that a firm manages its inventories in an efficient and most effective manner.

2.2 Inventory Management

Inventories are asset items held for sale in the ordinary course of business or goods that will be used or consumed in the production of goods to be sold. The description and measurement of inventory require careful attention because the investment in inventories is frequently the largest current asset of merchandising (retail) and manufacturing businesses.

An inventory can be defined as the raw materials, work-in-process goods and completely finished goods that are considered to be the portion of a business's assets that are ready or will be ready for sale. Inventory represents one of the most important assets that most businesses possess, because the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for the company's shareholders/owners

2.2.1 Purpose of Holding Inventories

Keeping the stock of inventories involves locking of the company's funds and increase in storage and handling costs. Companies hold inventories basically for 3 motives

- Transactions motive i.e. to ensure smooth production and sales operations.
- Precautionary motive i.e. to guard against the volatility of demand and supply factors.
- Speculative motive which is done to take benefit of price fluctuations.

Let us see inventory as a components of working capital.

2.2.2 Types of Inventories

The various forms of inventories include

- Raw material inventories are the ones that form the basic ingredients to be converted into finished products by means of manufacturing process. A company buys and stores the raw materials to be used later.
- Work-in-process inventories are semi-finished goods and require more processing before becoming finished goods that are ready for sale.
- Finished goods inventoriesare completely ready products that can be sold.
- Other than above three basic inventories, there is one more inventory type called as supplies, also known as stores and spares. Though they are not directly into production, but are required for the process of production. Examples of supplies are materials like soaps, brooms, oil, fuel, light etc.

Inventory Management aims at reducing the direct and indirect costs that are associated with the inventory. It also includes maintaining an appropriate and sufficient inventory supply for the smooth production and sales activities. The severity of inventory management of a firm depends upon the extent to which the firm has invested in inventories. An ideal and efficient inventory management -

- Must ensure that the raw materials are supplied at the right time and quantities for smooth production operations.
- Should anticipate price fluctuations and accordingly keep enough supply of raw materials in times of shortage.
- Maintain a healthy supply of finished goods for better customer service as well as smooth sales activities
- Reduce the carrying time and expenses
- Exercise control over investments made in inventories.

2.2.3 Inventory Management Techniques

- Economic Order Quantity (EOQ)
- Reorder Point
- Stock Level

Economic Order Quantity (EOQ)

The Economic Order Quantity is the optimal order size that results in the lowest total of order and carrying cost for an item of inventory given its expected usage, carrying cost and ordering cost. The EOQ determines the order size which will minimize the total inventory cost.

$$EOQ = \sqrt{\frac{2\ (\text{Annual usage in units})\ (\text{Order cost})}{(\text{Annual carring cost per unit})}}$$

Total Inventory Cost = Ordering Cost + Carrying Cost

The ordering cost includes the cost of acquiring raw material. It includes the activities like purchase ordering, transporting, storing and inspecting.

The carrying cost is the cost incurred for maintaining a given level of inventory.

Examples :

- Size of order (units) : 300

  Number of orders in a year : 8

  Total ordering cost at R 100 per order = 800
- Size of order (units) : 400

  Number of orders in a year: 6

  Total ordering cost at R 100 per order = 600
- Size of order (units) : 600

  Number of orders in a year: 4

  Total ordering cost at R 100 per order = 400

From the above examples, we can see that a company can reduce its total ordering cost by increasing the order size which will reduce the number of orders.

EOQ Formula

$= \sqrt{(2AO / C)}$ i.e sqroot (2AO / C)

where A = total requirement

O = order cost

C = carrying cost

Example:

The total requirement is 2000 units. Ordering cost per order is R 40 and carrying cost per unit is R 2. The EOQ will be

$$EOQ = \sqrt{(2 \times 2000 \times 40 / 2)}$$

$$= 282.84$$

$$= 283 \text{ units}$$

Reorder point

After EOQ, the second technique for inventory management is reorder point where the reorder point is the inventory level at which an order should be given to restock the inventory. To decide the reorder point, we should know

- Lead time
- Average usage
- Economic order quantity

Lead time is the time taken to restock the inventory once the order is given.

Reorder point = Lead time X Average usage

Suppose, EOQ = 1000 units and the lead time is 4 weeks and average usage is 100 units per week. Here the new order should be placed at the end of 10th week. But as there is lead time of 4 weeks, the order should be placed at the end of 6th week. So, here the reorder point = 100 units X 4 weeks = 400 units.

Stock Level

This technique keeps track of the goods the company has, the issue of goods and the receipt of orders. It keeps track of the level of inventory it has. If this technique or system reports that an item is at or below the reorder point level, the firm places an order for the item.

2.2.4 Pricing of Inventories

Following are the different ways of valuing the inventories and these methods are important to have an efficient inventory management process. These methods are used to value the raw materials:

- First-in-first-out (FIFO)
- Last-in-first-out (LIFO)
- Weighted Average Cost method
- Standard Price method
- Replacement or Current Price method

Inventory Pricing

Method	Assumption	Income Statement Effect	Balance Sheet Effect
FIFO	When a company sells an item from inventory the oldest one is sold	The older inventory was cheaper, so cost of sale is less and income is higher	The remaining inventory carried on the balance sheet is the newest, and most valuable
LIFO	When an item is sold from inventory the newest one is sold	The never (more expensive) inventory is sold, so the cost of sales is higher and income is lower	Remaining inventory is shown as an older and less valuable asset
Average cost	The average cost of all inventory is used for both cost of sales and inventory	Both cost of sales and income will be between the levels recorded under LIFO or FIFO	Inventory asset will be between the levels recorded under LIFO or FIFO

Source- Inventory Accounting Methods: LIFO, FIFO, Weighted Average and Specific Identification, financial-education.com

- **First-in-first-out (FIFO):** In this method, the raw materials from the stores will be issued in the order in which they are received. Hence, the cost of material obtained first will determine the pricing in this method.
- **Last-in-first-out (LIFO):** In LIFO method, the recently purchased material will determine the price of the issued material.
- **Weighted Average Cost Method:** The issued material will be priced purely on the basis of weighted average where, the weights will be decided based on the quantity.
- **Standard Price method:** In this method, a predetermined standard cost will be used to price the issued material. On purchase of the material, this standard price will be deducted from the stock account.
- **Replacement / Current Price method:** This method prices the material at the value that is realized at the time of issuance.

Check your progress 1

1. The _____is the optimal order size that results in the lowest total of order and carrying cost for an item of inventory given its expected usage, carrying cost and ordering cost.

   a. LIFO

   b. Economic Order Quantity

2. The _____the order size which will minimize the total inventory cost.

   a. Economic Order

   b. EOQ determines

2.3 Receivables Management

To increase the sales from the customers who cannot borrow from other sources, the companies generally sell goods on credit. If the credit is given to the customers and when such finished goods are sold, they get converted into receivables which in turn can be converted into cash. The balance in the receivables account is – average daily credit sales X average collection period.

Let's say, if the average daily credit sales of a firm is ₹ 5,00,000 and the average collection period is 30 days, the average balance in the receivables account would be

5,00,000 × 30 = ₹ 1,50,00,000.

In many organizations, receivables form an important part of the total assets. Receivables management is time consuming for the finance manager.

2.3.1 Purpose of Receivables

In order to understand the purpose of receivables, it is very important to understand the main aim of receivables management. The primary aim of receivable management is promotion of sales and gains till a certain limit where the returns obtained by funding of receivables is less than the cost that the company is required to incur in order to fund these receivables. So, the purpose of receivables include

- Maximizing the sales by selling the goods on credit rather than insisting on immediate payment of cash.
- When the goods are sold on credit, higher profit margins are charged unlike cash sales, resulting in increased profits.
- In today's competitive world, the company will have to give better credit terms than offered by its competitors.

2.3.2 Cost of Maintaining Receivables

1. **Blockage of additional funds:** If the firm is granting credit to the customer, then there would be some time lag between the credit sale to the customer and receipt of cash from the customers. Since additional funds are required to maintain these receivables, the company has to manage the finances required for other purposes. Since the company has to invest in additional funds, the outgo will be in the form of interest or the opportunity cost of funds.
2. **Maintenance cost:** Since the company is into receivables management, it has to incur additional expenses in the form of clerk salary, investigation of the debtors, credit checks. In short, the administrative cost will increase due to the receivables management.
3. **Defaulting cost:** Many times the company incurs loses from bad debts. The bad debts are result of default in payments by the customers who were offered credit.
4. **Collection cost:** Collection costs are the costs which are incurred for the collection of money from the customers at the right time.

Exhibit: Why do companies in India grant credit?

Companies in practice feel the necessity of granting credit for several reasons.

- **Competition:** Generally, the higher the degree of competition, the more credit is granted by a firm. However, there are exceptions such as firms in the electronics industry in India.
- **Company's bargaining power:** If a company has a higher bargaining power vis-à-vis its buyers, it may grant no or less credit. The company will have a strong bargaining power if it has a strong product, monopoly power, brand image, large size or strong financial position.
- **Buyer's requirements:** In a number of business sectors, buyers/dealers are not able to operate without extended credit. This is particularly so in the case of industrial products.

Buyer's status

Large buyers demand easy credit terms because of bulk purchases and higher bargaining power. Some companies follow a policy of not giving much credit to small retailers since it is quite difficult to collect dues from them.

- **Relationship with dealers:** Companies sometimes extend credit to dealers to build long term relationships with them or to reward them for their loyalty.
- **Marketing tool:** Credit is used as a marketing tool, particularly when a new product is launched or when a company wants to push its weak product.
- **Industry practice:** Small companies have been found guided by industry practice or norms more than the large companies. Sometimes companies continue giving credit because of past practice rather than industry practice.
- **Transit delays:** This is a forced reason for extended credit in the case of a number of companies in India. Most companies have evolved systems to minimize the impact of such delays. Some of them take the help of banks to control cash flows in such situations.

2.3.3 Monitoring Receivable

In order to ensure the efforts put into collections, a firm should continuously monitor its payment of receivables. The four methods for managing receivables are –

1. Average collection period (ACP)
2. Ageing schedule.
3. Days Sales Outstanding
4. Collection Matrix

1. Average collection period (ACP)

The average collection period is primarily based on outstanding receivables on year-end. In order to exercise internal control, monitoring should be done frequently. If the sales are seasonal or tend to grow towards the year-end, then, the outstanding balance at the end of year can be misleading.

2. Ageing schedule

Ageing schedule depicts the age-wise distribution of accounts receivable at any particular time. In other words, the receivables are broken down based on the time period for which they have been outstanding.

The behavioural changes in the payments made by customers can be easily identified by comparing the ageing schedules periodically.

The ageing schedule can be compared with the company's extended credit period.

If the degree of receivables that belongs to high-age groups is found to be above the stipulated norm, then suitable action should be taken before it turns into bad debts.

3. Days Sales Outstanding

The average number of days sales outstanding at any particular period of time say at the end of a quarter or at the end of the month can be given by the following formula.

Days sales outstanding (DSO) = Accounts receivable at a particular time / average daily sales

The status of receivables of a company can be said to be under control, if the daily sales outstanding lies within a pre-specified norm which is linked to the credit period followed by the company. A higher daily sale outstanding indicates that the collection process is slow and so the collection policy should be made more stringent.

4. Collection Matrix

In order to analyze the behavioural changes in the payments made by the customers, it is necessary to study the collection patterns associated closely with the credit sales.

For example, the credit sales in different months are as follows.

20% in January, 22% in February, 25% in March, and 30% in April

By observing the collection pattern, one can make out whether the collection is improving or is constant or is decreasing.

An advantage of this method is that we can maintain percentage of collections that can be used to be projected in monthly receipts for each budgeting period.

Check your progress 2

1. _____is used as a marketing tool, particularly when a new product is launched or when a company wants to push its weak product.
   a. Finance
   b. Credit
2. _____depicts the age-wise distribution of accounts receivable at any particular time.
   a. Ageing schedule
   b. Cost

2.4 Cash Management

Cash is considered of crucial importance because it is the most liquid asset and the life blood of the firms. Since cash is the life blood of the business, it is a decisive factor in the solvency of the company.

Difference between profit and cash

Normally, we think profits and cash is the one and the same concept. Profit sare the excess of income over the expenditure of the companies for a year. It includes cash and non-cash items. (Cash items like sales, interest on investments, dividend etc. and non-cash items like credit sales, excess provisions for doubtful debts)

Cash means the cash and bank balances of the company for the particular year given in the balance sheet. Profits of the company depict earning capacity of the company and cash shows the company's liquidity position.

Normally, cash in a narrow sense is cash and bank balances and demand deposits with the bank and in the broader sense it includes cash and bank balances and demand deposits with the bank plus marketable securities that can be converted into cash.

2.4.1 Reasons for Holding Cash

Let us see why the companies hold the cash.

1. Transaction Motive
2. Precautionary Motive
3. Speculative Motive
4. Cash Flow Management

1. Transaction Motive

Since the companies enter into transactions with the other companies and some of these transactions are cash based and rest of them are credit based, the company has to strike abalance between cash inflow and cash outflow. The company keeps some amount as cash to deal with such transactions where transactions are cash based.

2. Precautionary Motive

Contingencies like sudden fire, accidents, employee strike, early payment to the creditors, mismatch between receipt and payments can occuranytime. The company maintains some amount in the form of cash to safeguard against such incidents.

3. Speculative Motive

Speculative motives play abig role in holding the cash by the corporate. To take the advantage of sudden decrease in the raw material prices or to invest in investment opportunities which are short term, the companies keep some amount of cash with them.

4. Cash Flow Management

In cyclical and seasonal industries like automobile, tea, jute there is mismatch between cash inflow and cash outflow. These companies hold more cash than required to safeguard against seasonal or cyclical

changes.

2.4.2 Factors for Efficient Cash Management

We need to consider following factors to enhance the efficiency of cash management.

1. Immediate prepa ration of bills
2. Collection of cash and cheques.
3. Centralized purchasing system

1. Immediate prepa ration of bills

First and foremost step in efficient cash management is bridging the time gap between the date of dispatching goods and the date of preparing the bills and sending them to the customers. This means, it will help reduce the delay in bill payment and will result in prompt receipt of cash.

2. Collection of cash and cheques

The company must deposit the cash and the cheques it received in the bank on the same day. This can be done by

- Keeping a dedicated staff for such work
- The customers can make the payment directly by depositing the cash in the company's account.

3. Centralized purchasing system

When the company goes for centralized purchasing system, it can achieve many advantages like the company can go for bulk purchase and can gain discounts which will effectively reduce the cost allocations. Here, the company can reduce the cost of transportation, handling, and storage.

Check your progress 3

1. _____are the excess of income over the expenditure of the companies for a year.

   a. Cash

   b. Profits

2. Speculative motives play abig role in holding the cash by the _____

   a. corporate

   b. Incorporate

2.5 Let Us Sum Up

In this unit we had a very detailed discussion on the working capital management and on the inventory management. This chapter covered the basics of working capital management and it included areas like receivables management, cash management and inventory management. In this unit we discussed that companies hold inventories basically for 3 motives -Transactions motive i.e. to ensure smooth production and sales operations, Precautionary motive i.e. to guard against the volatility of demand and supply factors, Speculative motive which is done to take benefit of price fluctuations.Other purposes of

holding the inventory are - To safeguard against lost sales, to gain trade discounts, Reducing operational cost, Ensuring efficient production activities.We covered inventory management techniques like - Economic Order Quantity (EOQ), Reorder point, and Stock Level. We price the inventories by five methods namely - First-in-first-out (FIFO), Last-in-first-out (LIFO), Weighted Average Cost method, Standard Price method and Replacement or Current Price method.Purpose of the receivables include - Maximizing the sales by selling the goods on credit rather than insisting on immediate payment of cash. When the goods are sold on credit, higher profit margins are charged unlike cash sales, resulting in increased profits and third being the company will have to give better credit terms than offered by its competitors. We know that cost of maintaining the receivables are high and that include Blockage of additional funds, Maintenance cost, Defaulting cost, Collection cost. There are four methods of managing the receivables. They are - Average collection period (ACP), Ageing schedule, Days Sales Outstanding and Collection Matrix.We saw the difference between the cash and profit concept. There are four reasons to hold the cash - Transaction motive, Precautionary motive, Speculative motive, Cash flow management.

So at the end of this unit the readers would have got the sufficient idea of working capital and inventory management and various other concepts which are considered to be very important.

2.6 Answers for Check Your Progress

Check your progress 1

Answers: (1-b), (2-b)

Check your progress 2

Answers: (1-b), (2-a)

Check your progress 3

Answers: (1-b), (2-a)

2.7 Glossary

1. **Working Capital Policy -** Basic policy decision regarding (1) target levels for each category of current assets and (2) how current assets will be financed.

2.8 Assignment

What is working capital management in the context of receivables management and cash management?

2.9 Activities

Explain inventory management techniques

2.10 Case Study

Visit a company nearest to you and find out how does the company manage its receivables, cash and inventories?

2.11 Further Readings

1. Financial management - ICFAI.
2. Financial management – I. M. Pandey
3. Financial management – Khan & Jain

INVESTMENTS AND FUND

: UNIT STRUCTURE :

3.0 Learning Objectives

After learning this unit, you will be able to understand:

- Why capital should be carefully evaluated before it is incurred ?
- The role of accounting profit in capital budgeting.
- Distinguish between cash flow and accounting profit.
- Calculate NPV and the Internal Rate of Return (IRR).
- Estimate cash flow for new projects.

3.1 Introduction

The term Capital budgeting contains the relatively scarce, non-human resource of production enterprise, and budgeting, indicating a detailed quantified planning which guides future activities of an enterprise towards the achievement of its profit goals. Capital refers to total funds employed in an enterprise as a whole.

3.2 Meaning of Capital Budgeting

The Capital fund is increased by an inward flow of cash and decreased by an outward flow of cash and as such it is important for an enterprise to plan and arrange cash flows properly.

Capital budgeting, then, consists in planning the development of available

capital for the purpose of maximizing the long-term profitability.

Capital budgeting may be defined as the decision-making process by which a firm evaluates the purchase of major fixed assets, including buildings, machinery, and equipment. It deals exclusively with major investment proposals which are essentially long-term projects and is concerned with the allocation of firm's scarce financial resources among the available market opportunities, a search for a new and more profitable investment proposal and the making of an economic analysis to determine the profit potential of each investment proposal. They are large, permanent commitments which influence its long-run flexibility and earning power.

It is a process by which available cash and credit resources are allocated among competitive long-term investment opportunities so as to promote the greatest profitability of company over a period of time. It refers to the total process of generating, evaluating, selecting and following up on capital expenditure alternatives.

3.2.1 Principal of Capital Budgeting

Capital expenditure decision should be taken on the basis of following factors-

- Creative search for Profitable opportunities-The first stage is the conception of profit making idea. Profitable investment opportunities should be sought to supplement existing proposals.
- Long range capital planning-A flexible programme of a company's expected future development over a long period of time should be prepared.
- Short range capital planning -This is for short period. It indicates its sectoral demand for funds to stimulate alternative proposals before the aggregate demand for funds is available.
- Measurement of project work-The economic worth of a project to a company is evaluated at this stage. The project is ranked with other projects.
- Screening and Selection-The project is examined on the basis of selection criteria, such as supply and cost of capital, expected returns, alternative investment opportunities etc.
- Control of authorized outlays-Outlay should be controlled in order to avoid costly delays and cost over-runs.
- Post Mortem-The ex-post routines of a completed investment project should be re-evaluated in order to verify their exact conformity with exact projections.
- Forms and Procedures-These involve the prepa ration of reports necessary for any capital expenditure programme.
- Economics of capital budgeting-It includes estimating the rate of return on capital expenditure. Knowledge of economic theory underlying investment decisions is needed for this purpose.

Check your progress 1

1. _____may be defined as the decision-making process by which a firm evaluates the purchase of major fixed assets, including buildings, machinery, and equipment.

   a. Capital structure

   b. Capital budgeting

2. Economics of capital budgeting-It _____ the rate of return on capital expenditure.

   a. includes estimating

   b. estimates

3.3 Kinds of Capital Budgeting Proposals

- Replacement
- Expansion
- Modernization of Investment Expenditures
- Strategic Investment Proposals
- Diversification
- Research and Development

Check your progress 2

1. _____decision includes expenses incurred on modernization of investment expenditures on existing asset.

   a. Capital structure

   b. Financial budgeting

   c. accounting

   d. Capital budgeting

3.4 Kinds of Capital Budgeting Decisions

Capital budgeting refers to the total process of generating, evaluating, selecting and following upon capital expenditure alternatives. The firm allocates or budgets financial resources to new investment proposals. Basically the firm may be confronted with three types of capital budgeting decisions -

- Accept-reject decisions
- Mutually Exclusive Project decisions
- Capital rationing decisions.

Check your progress 3

1. The firm allocates or budgets _____to new investment proposals on the basic of capital budgeting techniques

   a. asset

   b. financial resources

2. _____refers to the total process of generating, evaluating, selecting and following upon capital expenditure alternatives

   a. Capital budgeting

   b. Financial budgeting

3.5 Capital Budgeting Techniques

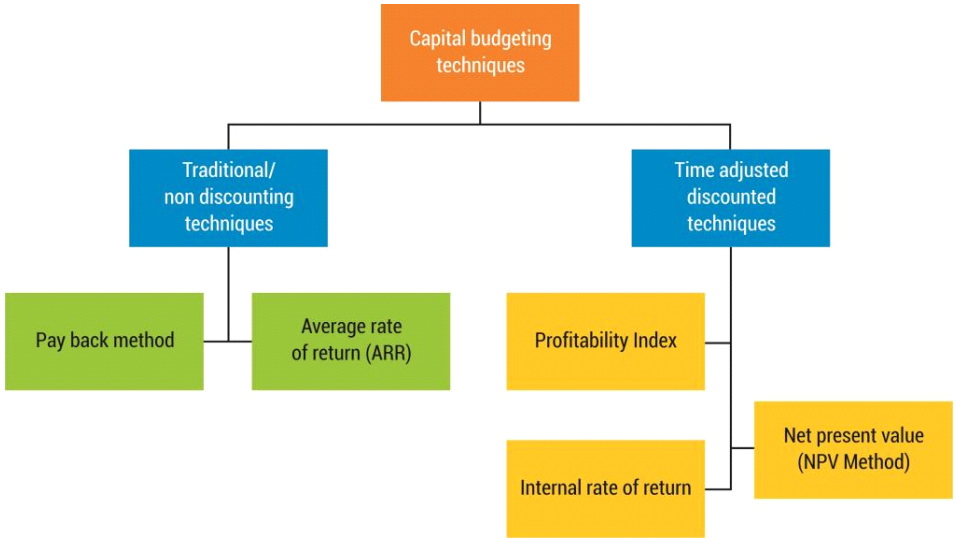

Fig 3.1 Capital Budgeting Techniques

Pay Back Method

The pay back method (PB) is the traditional method of capital budgeting. It is the simplest and perhaps, the most widely employed quantitative method for appraising capital expenditure decisions. This method answers the question - How many years will it take for the cash benefits to pay the original cost of an investment? Cash benefits here represent CFAT (cash flows after taxes) ignoring interest payment. This method measures the number of years required for the CFAT to pay back the original outlay required in an investment proposal.

There are two ways of calculating the PB period. The first method can be applied when the cash flow stream is in the nature of annuity for each year of the project's life i.e. CFAT are uniform.

PB Period = Investment / Constant annual cash flow

The second method is used when a project's cash flowsare not equal, but vary from year to year. In such a situation, PB is calculated by the process of cumulative cash flows till the time when cumulative cash flowsbecome equal to the original investment outlay.

If the actual payback period is less than the pre-determined pay back, the project would be accepted; if not, it would be rejected. 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 pay back may be assigned rank one.

Example:

1. A project requires an initial investment of R 1,80,000and yield an annual cash inflow of R60,000 for 8 years.

$$\text{PB Period} = \frac{1,80,000}{60,000} = 3 \text{ years}$$

2. A project requires an initial cash outlay of R 5,00,000/- and generates cash inflows as under-

Year	Cash Inflows
1	50,000
2	1, 00,000
3	1, 25,000
4	2, 00, 000
5	50,000
6	50,000
7	50,000
8	25,000

Calculated payback period -

Calculation of payback period

Year	Cash Inflows (R)	Cumulative cash Inflows
1	50,000	50,000
2	1,00,000	1,50,000
3	1,25,000	2,75,,000
4	2,00,000	4,75,000
PBP Exists		
5	50,000	5,25,000
6	50,000	5,75,000
7	50,000	6,25,000
8	25,000	6,50,000

upto 4th year 4,75,000 are received back. Now only R 25,000 (R 5,00,000 – R 4,25,000) are to be recoverd from 5th years. In 5th year receipt will be R 50,000.

$$\therefore \frac{\text{Rs. } 25{,}000}{\text{Rs. } 50{,}000} = 6 \text{ months}$$

50,000 = 12 months

∴ R 25,000 = (?)

PB period of project = 4.5 years i.e. 4 years and 6 months.

Advantages of Pay Back Method:-

- It is an important guide to investment policy.
- It lays a sufficient emphasis on liquidity.
- It is easy to understand, calculate and communicate.
- The method enables a firm to choose an investment which yields a quick return on cash funds.
- It enables a firm to determine the period required to recover the original investment with some percentage return and thus arrive at the degree of risk associated with the investment.
- It is an adequate measure with every profitable investment opportunity.

- The method is quite the simplest of all the techniques used by the industry.
- It is undoubtedly an improvement over the criteria of urgency.
- Other than its simplicity, the main advantage claimed for the payback method is that is abuilt-in safeguard against risk.

Disadvantages:

- The method is not consistent with the objective of maximizing the market value of firm's share.
- It does not consider income beyond the payback period.

Average Rate of Return Method

This method is also known as Accounting Rate of Return. This method considers Avegare profit and average investment which means the average annual yield of the project. Under this method profit after tax and depreciation (also called as accounting profit) of a percentage of total investment is considered.

The annual returns of a project are expressed as a percentage of the net investment in the project. This method consists of aggregating all the earnings after depreciation and dividing them by the profits in useful lifespan. The resultant average earnings over the period is divided by the average investment over the period. The average investment in a project is always ½ of the original investment. For calculating ARR, sometimes the value of the initial investment is used in the place of average investment. But average investment is more logical.

$$\text{ARR} = \frac{\text{Average Annual Earnings aftertaxes \& depreciation}}{\text{Average Investment}} \times 100$$

Where,

$$\text{Average investment} = \frac{\text{Original investment}}{2}$$

Advantages:

- It is easy to calculate because it makes use of reality available accounting information.
- Where a number of capital investment proposals are being considered, a quick decision can be taken.
- If high profits are required, this is certainly a way of achieving them.
- It is also simple to understand and easy to adopt.
- It can be calculated using the accounting data.

Disadvantages:

- It does not consider the length of life of projects.
- It ignores the fact that the profits earned can be reinvested.
- It does not consider the benefits accruing to the company as a result of sale.

- It does not take into accounting time value of money
- It uses the straight line method of depreciation. Once a change in method of depreciation takes place the method will not be easy to use and will not work practically.

Example:

ABC Ltd. is considering the purchase of a machine. Two machines are available X and Y. The cost of each machine is R 60,000. Each machine has an expected life of 5 years. Net profit before tax but after depreciation during the expected life of the machine is given below :

Year	Machine X (R)	Machine Y (R)
1	15,000	5,000
2	20,000	15,000
3	25,000	20,000
4	15,000	30,000
5	10,000	20,000
Total	85,000	90,000

Following the method of return on investment ascertain which of the alternatives will be more profitable.The average rate of tax may be taken as 50%.

Statement of Profitability

Year	Machine X (R)			Machine Y (R)		
	Profit Before Tax (R)	Tax at 50% (R)	Profit After Tax (R)	Profit Before Tax (R)	Tax at 50% (R)	Profit After Tax (R)
1	15,000	7,500	7,500	5,000	2,500	2,500
2	20,000	10,000	10,000	15,000	7,500	7,500
3	25,000	12,500	12,500	20,000	10,000	10,000
4	15,000	7,500	7,500	30,000	15,000	15,000
5	10,000	5,000	5,000	20,000	10,000	10,000
	85,000	42,500	42,500	90,000	45,000	45,000
Average Profit 42,500 = 5 = 8,500 (After tax) 60,000 = 2 = 30,000 Investment (8,500 ÷ 30,000) × 100 = 28.33% Rate of Return				45,000 + 5 = 9,000 60,000 = 2 = 30,000 (9,000 ÷ 30,000) × 100 = 30%		

Machine Y is more profitable (Note: It is presumed that net profit is arrived after providing for depreciation).

Example:

The working results of two machines are given below

	Machines I (R)	Machines II (R)
Cost of machines	45,000	45,000
Sales per Year	1,00,000	80,000
Total cost per year (excluding depreciation)	36,000	30,000
Expected life	2 Years	3 Years

Which of the two should be preferred?

Solution:

Calculation of Annual Average Earnings

	Machines I (R)	**Machines II (R)**
Sales per year	1,00,000	80,000
Less: Cost per year	36,000	30,000
Profit before depreciation	64,000	50,000
Less: Depreciation	22,500	15,000
Net Profit	41,500	35,000
Annual Average Earnings	41,500	35,000
Annual Investment	22,500	22,500
Arr =	$\frac{41,500}{22,500} \times 100 = 184\%$	$\frac{35,000}{22,500} \times 100 = 156\%$

Note : Depreciation

I	II
$\frac{45,000}{2\ years}$	$\frac{45,000}{3\ years}$
= R 22,500	= R 15,000

Machine I has higher ARR. Hence Machine I should be preferred.

Net Present Value (NPV) Method

The objective of the firm is to create wealth by using existing and future resources to produce goods and services. To create wealth, inflows must exceed the present value of all anticipated cash outflows. NPV is obtained by discounting all cash outflows and inflows attributable to certain investment

project by a chosen percentage e.g. the entity's weighted average cost of capital. The method discounts the net cash flows from the investment by the minimum required rate of return and deducts the initial investment to give the yield from the funds invested. If yield is positive the project is acceptable. If it is negative the project is unable to pay for itself and is thus unacceptable.

The activity involved in calculating the present value is known as discounting and the factors by which we have multiplied the cash flows are known as the discount factors.

$$NPV = C_0 + \frac{C_t}{(1+r)^t}$$

$$NPV = C_0 + \frac{C_1}{(1+r)^1} + \frac{C_2}{(1+r)^2} + \ldots + \frac{C_t}{(1+r)^t}$$

Calculation of NPV (Net Present Value)

Discount factors = l

$(l + r)^n$

Where, 'r' is the rate of interest per annum

'n' is the number of years for which we are discounting.

Advantages

- It is based on the assumption that cash-flows and dividends determine shareholder's wealth
- It recognizes the time value of money.
- It considers the total benefits arising out of proposals over its life-time.
- This method of project selection is instrumental in achieving the financial objective i.e. the maximization of shareholder's wealth

Disadvantages

- It is difficult to calculate as well as understand it as compared to accounting rate of return method or PB method.
- Calculation of the desired rates of return presents serious problems. Generally cost of capital is the basis of determining the desired rate. The calculation of cost of capital is itself complicated. Moreover, desired rates of return will vary from year to year.
- This method is an absolute measure. When two projects are being considered, this method will favour the project which has higher NPV (Net Present Value).
- This method emphasizes the comparison of NPV and disregards the initial investment involved. Thus, this method may not give dependable results.

Example: 1)

A choice is to be made between two competing proposals which require an equal investment of R50, 000 and are expected to generate net cash flows as

under:

Cost of capital of the company is 10%.

Problem

	Project X (R)	**Project Y (R)**
1st Year end	25,000	10,000
2nd Year end	15,000	12,000
3rd Year end	10,000	18,000
4th Year end	Nil	25,000
5th Year end	12,000	8,000
6th Year end	6,000	4,000

Comparative Statement of Net Present Values Capital

Year	PV Factor at 10%	Project X		Project Y	
		Cash Inflows	Present Values	Cash Inflows	Present Values
1	0.909	25,000	22,725	10,000	9,090
2	0.826	15,000	12,390	12,000	9,912
3	0.751	10,000	7,510	18,000	13,518
4	0.683	Nil	Nil	25,000	17,075
5	0.621	12,000	7,452	8,000	4,968
6	0.564	6,000	3,384	4,000	2,256
Total Present value Cash Inflows			53,461		56,819
Initial Investments (Cash Outlay)			50,000		50,000
Net present value			R 3,461		R 6,819

Since project Y has the highest NPV (Net Present Value), Project Y should be selected

Note : Present value of a rupee at different is available from present value table.

Example 2

Project X initially costs R 25,000. It generates the following cash follows

Year	Cash inflows (R)	Discount Factor at 10% (R)
1	9,000	0.909
2	8,000	0.826
3	7,000	0.751
4	6,000	0.683
5	5,000	0.621

Taking the cut - off rate as 10%, suggests whether the project should be accepted or not.

Solution:

Statement of Net Present Value

Year	Cash Inflows	P. V. Factor at 10% (R)	Present Values of Cash Inflows (R)
1	9,000	0.909	8,181
2	8,000	0.826	6,608
3	7,000	0.751	5,257
4	6,000	0.683	4,098
5	5,000	0.621	3,105
Total Present Value of Cash Inflows			27,249
Less: Initial Outlay			25,000
NPV			2,249

The Project should be accepted since the Net Present Value (NPV) is positive.

Profitability Index Method

The profitability index (PI) is yet another method of evaluating the investment proposals. It is also known as the benefit- cost ratio (B/C). It represents a ratio of the present value of future cost benefit at the required rate of return to the initial cash outflow of the investment. This is similar to the NPV approach.

The PI approach measures the present value of returns per rupee invested. Where projects with different initial investments are to be evaluated the PI approach is the best technique to be used.

$$PI = \frac{\text{Present value of cash inflows}}{\text{Present value of cash outlay}}$$

In this method, the numerator measures the benefits and the denominator measures the costs. The project is to be accepted when the PI is greater than 1 and it will be negative when PI is less than 1.

The selection of the projects with the help of PI method can be affected on the basis of ranking. The project with the highest PI is given the first rank followed by others in the descending order.

Advantages

- This method takes into consideration the time value of money as also the total benefits spread throughout the life span of the project. It can be employed safely as sound investment criteria.
- The PI method is abetter evaluation technique than the NPV (Net Present Value) method in a situation of capital rationing.

Disadvantages

- The PI method is not easy to understand, and is difficult to use in practice.
- It involves more tedious calculations than the traditional method.

Example 1)

The initial cash outlay of a project is R 1,00,000 and it generates cash inflow of R 40,000. R30, 000, R50,000 and 20,000. Assuming 10% rate of discount, calculate Profitability index.

Solution

Year	Discount Factor at 10%
1	0.909
2	0.826
3	0.751
4	0.683

Calculation of Profitability Index

Year	Cash Inflow at 10% (Rs.)	Discount Factor Value	Present (Rs.)
1	40,000	0.909	36,360
2	30,000	0.826	24,780
3	50,000	0.751	37,550
4	20,000	0.683	13,600
		Total PV	Rs. 1,12,350

$$\text{Profitability Index} = \frac{\text{PV of cash inflowas}}{\text{Intial Cash outlay}} = \frac{1,12,350}{1,00,000} = 1.1235$$

Since PI is greater than 1 project should be accepted.

2) Problems

The initial outlay of the project is R1,00,000 and it generates cash inflows of

R50,000, R40,000, R30,000 and R20,000 in the years of its lifespan. You are required to calculate the NPV (Net Present Value) and PI of the project assuming 10% rate of discount.

Year	Cash Inflows (R)	Discount Factor at 10%	Present Values (2 × 3) (R)
1	50,000	0.909	45,450
2	40,000	0.826	33,040
3	30,000	0.751	22,530
4	20,000	0.683	13,660
			1,14,680
		Less: Cash Outlay NPV	1,00,000
		NPV	14,680

Year Cash Inflows Discount Factor at 10% Present Values (R) (2 x 3) (R)

1 50,000 0.909 45,450

2 40,000 0.826 33,040

3 30,000 0.751 22,530

4 20,000 0.683 13,660

1,14,680

Investments 4 0.683 and Fund

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Working Capital Management

and Investment

Less: Cash Outlay NPV 1,00,000

14,680

PI (Gross) = 1,14,680=1.1468 PI (Net)=1.1468-1=0.1468

1,00,000

Internal Rate of Return Method (IRR)

The IRR Method is yet another discounted cash flow technique which takes into consideration the magnitude and timing of cash flows. It is also known as time adjusted rate of return, marginal efficiency of capital, marginal productivity of capital, and yield on investment and so on. It is employed with the cost of investment and the annual cash inflows are known while the unknown rate of earnings is to be ascertained. It is known as trial and error method.

The Internal Rate of Return (IRR) is that rate at which the sum of discounted cash inflows equals the sum of discounted cash out flows. It is the rate at which the NPV (Net Present Value) of the investment is zero. It is called

internal rate because it depends mainly on the outlay and proceeds associated with the investment and not on any rate determined outside the investment.

Advantages

- The IRR method considers the time value of money like the NPV method.
- It takes into consideration the cash flows over the entire lifespan of the project.
- Business executivesand non-technical people understand the concept of Internal Rate of Return (IRR) much better than that of NPV.
- It is consistent with the overall objective of maximizing shareholder's wealth.

Disadvantages

- It produces multiple rates which can be confusing.
- Selected project based on higher IRR may not be profitable.
- Unless the life of the project is accurately estimated, assessment of cash flows cannot be correctly made.
- This method is difficult to understand as well as apply in practice because it involves complicated calculations.
- This method does not give unique answer in all situations. It yields negative rate or multiple rate under certain circumstances.

Steps to solve problem :

(i) Assume is discount rates (a) Lower rate and (b) higher rate.

(ii) At lower rate NPV of Project should be positive

(iii) At lower rate NPV of Project should be negative.

(iv) Formula :

$$\text{IRR} = \text{Lower rate} + \frac{\text{NPV of Lower rate}}{\text{NPV of Lower rate - NPV of higher rate}} \times (\text{HR}–\text{LR})$$

Example:

Project X involves an initial outlay of R1, 60,000. Its lifespan is expected to be three years. The cash streams generated by it are expected to be as follows:

Year	Cash Inflows (R)
1	80,000
2	70,000
3	60,000

You are required to calculate the l RR

Solutions

Year	Cash Inflows	Rate of Discount (14%)	Present Value (₹)	Rate of Discount (16%)	Present Value (₹)	Rate of Discount (15%)	Present Value (₹)
1	80,000	0.877	70,160	0.862	68,960	0.870	69,600
2	70,000	0.770	53,900	0.743	52,010	0.756	52,920
3	60,000	0.675	40,500	0.641	38,460	0.658	39,480
Less: Initial Outlay			1,64,560		1,59,430		1,62,000
			1,62,000		1,62,000		1,62,000
NPV			(+) 2560		(-) 2,570		Zero

(1) Formmula :

$$\text{IRR} = \text{Lower discount rate} + \frac{\text{NPV of Lower rate}}{\text{NPV of Less Lower rate - NPV of higher rate}} \times$$

(Higher rate – Lower rate)

$$= 14 + \frac{2560}{2560} \times \frac{(16\text{-}14)}{(\text{-}2570)} = 14 + \frac{2560}{5100} \times 2 = 15\%.$$

Practical Problems

Example - A company is considering a new project for which the investment dataare as follows:

Capital outlay ₹ 2,00,000 Depreciation 20% p.a.

Forecasted annual income before charging depreciation but after all other charges, are as follows:

Year	₹
1	1,00,000
2	1,00,000
3	80,000
4	80,000
5	40,000
	4,00,000

On the basis of the available data, set out calculation, illustrating and comparing the following method of evaluating the return:-

a) Payback method b) Rate of return investment c) Internal rate of return.

Solution

Since there is no tax, the annual income before depreciation and after other charges is equivalent to cash flows (CF)

a) Capital outlay of R 2,00,000 is recovered in the first two years, R 1,00,000 (year) + R1,00,000 (year2), therefore the payback period is two years.

B) Rate of return on original investment:

Year	CF (R)	Depreciation (R)	Net Income (R)
1	1,00,000	40,000	60,000
2	1,00,000	40,000	60,000
3	80,000	40,000	40,000
4	80,000	40,000	40,000
5	40,000	40,000	--------
			2,00,000

Average Income = R 2,00,000/5 = R 40,000

$$\text{Rate of return} = \frac{\text{Average Income}}{\text{Original investment}} \times 100 = \frac{\text{Rs. 40,000}}{\text{Rs. 2,00,000}} 100 = 20\%$$

C) Calculation of IRR

$$\text{Average CF} = \frac{\text{Total CF}}{\text{No. of Year}} = \frac{\text{Rs. 4,00,000}}{5} = 80{,}000$$

$$\text{PB value} = \frac{\text{Cash out Flows}}{\text{Average CF}} = \frac{\text{Rs. 2,00,000}}{\text{Rs. 1,00,000}} = 2 \text{ years.}$$

Year	CF (R)	PVT at			Total PV (R)
		30%	34%	30%	34%
1	1,00,000	0.769	0.746	76,900	76,600
2	1,00,000	0.592	0.557	59,200	55,700
3	80,000	0.455	0.416	36,400	33,280
4	80,000	0.350	0.310	28,000	24,800
5	40,000	0.269	0.232	10,760	9,280
				2,11,260	**1,97,660**

The IRR (Internal Rate of Return) of a project is the rate of discount at which the NPV (Net Present Value) is 0.

$$\text{IQR} = \text{Lower rate} + \frac{\text{NPV of Lower rate}}{\text{NPV of Lower rate - NPV of higher rate}} \times (\text{HR–LR})$$

$$= 30 + \frac{11{,}260}{11{,}260 - (-2{,}340)} \times (34 - 30)$$

$$= 30 + \frac{11,260}{13,600} \times 4$$

$$= 30 + 3.31$$

$$= 33.31\ \%$$

Example -

The cash flows from two mutually exclusive Projects A and B are as under:

Years	**Project A**	**Project B**
0	R –22,000	R –27,000
(1-7 Annual)	6,000	7,000
Project life	7 Years	7 Years

i) Calculate NPV of the proposals at different discount rates of 15%, 16%, 17%, 18%, 19% and 20% ii) Advise on the project on the basis of the Internal Rate of Return (IRR) method.

Solution:

Computation of Present Value of cash inflows of different Projects

Dis. Rate	**Cash Flow (R)**		**PVAF***	**P.V. Cash Flow (R)**	
	Project A	Project B		Project A	Project B
15%	6,000	7,000	4.160	24,960	29,120
16%	6,000	7,000	4.040	24,240	28,280
17%	6,000	7,000	3.922	23,532	27,454
18%	6,000	7,000	3.812	22,872	26,684
19%	6,000	7,000	3.706	22,235	25,942
20%	6,000	7,000	3.605	21,630	25,235

*This value is available from present value annnity factor. This can be calculated as follows also, It is calculated for 15% like wise for rest rates also can be calculated.

Project A :

Year	CIF	DF @ 15%	PV
1	6000	.879	5220
2	6000	.756	4536
3	6000	.658	3948
4	6000	.572	3432
5	6000	.497	2982
6	6000	.432	2592
7	6000	.375	2250
Annuity Value		4.16	24,960

Calcutation of IRR

Dis. Rate	PV of inflows (A)	NPV (A)	PV of inflows (B)	NPV (B)
15%	R 24,960	R 2,960	29,120	R 2,120
16%	24,240	2,240	28,280	1,280
17%	23,532	1,532	27,454	454
18%	22,872	872	26,684	(-) 216
19%	22,235	235	25,942	(-) 1,058
20%	21,630	-370	25,235	(-) 1,765

Calculation of the Internal Rate of Return (IRR)

Project A: Since outflow of R 22,000 is falling between R 22,235 and R 21,630, the IRR must be between 19% to 20%. So, interpolating the difference of R 605 between 19% and 20%, the IRR comes to 19.39%.

$$= 19 + \frac{235}{235\text{-}(-370)} \times (20 - 19) = 19 + \frac{235}{605} \times 1 = 19.39\%$$

Project B: Since outflow of R 27,000 is falling between R27,454 and R26,684, the IRR must be between 17% to 18%. So, interpolating the difference of R 770 between 17% and 18%, the IRR comes to 17.68%

$$= 17 + \frac{454}{454 - (-216)} \times (18 - 17) = 17 + \frac{454}{670} \times 1 = 17.68\%$$

Conclusion:

As per the NPV technique, the Project is acceptable even if the discount rate is as high as 19% whereas, the project B becomes invariable at 18%. As per IRR (Internal Rate of Return) technique, the project A is acceptable and is having an IRR of 19.39% against the IRR of 17.68% of Project B

Check your progress 4

1. The _____of Return (IRR) is that rate at which the sum of discounted cash inflows equals the sum of discounted cash out flows

   a. Internal Rate

   b. External Rate

2. The objective of the firm is to _____by using existing and future resources to produce goods and services.

   a. create Health

   b. create wealth

3.6 Estimation of Cash Flow for New Project

Evaluation of a project should rather be based on cash flows as distinct from accounting profits.

Accounting profits are useful only for external reporting purposes and by themselves cannot be used for the purpose of capital budgeting decisions. Accounting profits are capable of distortion because of possible bias of individual accountants. Different methods of providing depreciation and valuing closing stocks can lead to different accounting figures. On the other hand, cash flowsare totally independent of different methods of accounting for depreciation and stocks. Properly calculated cash flows cannot be challenged by anyone.

Accountants do start with rupee coming in and rupee going out when they write cash book. But when calculating accounting income they carry out certain adjustments for depreciation, accruals and stock valuations. It is not always easy to convert the customary accounting profits back into actual cash flows but this has to be done.

We had seen earlier that cash flow = PAT + DEP but it is not always that simple in actual practice. Reputed text books have highlighted some basic principles of cash flows which are summed up below:

- Cash flows should be estimated on an incremental basis. A true worth of a project depends only on additional cash flows that can be generated if a project is accepted.
- It is necessary to take into consideration all incidental effects of a project on remainder of the business. Introduction of a new product may affect revenue of an existing product and therefore we must take into consideration this fact which is not normally recordable in accounting.
- Sunk costs should be ignored because they do not affect outflow of cash now. Whether we accept a project or reject it, sunk costs do not change and should therefore be ignored. For example, if we construct a factory on a piece of land, which was earlier acquired for another project but not actually put to use, is a sunk cost. There is no outflow if the same piece of land is now used for a new project.
- Opportunity costs cannot be ignored. This was hinted at point number two above. This can be stretched a little further. Suppose a new project

starts on a piece of land, which is not now acquired. However, if it is decided to sell the land for a sum and if it is not used for the new project then there is an opportunity cost or an implied outflow. Sale proceeds of the land will have to be sacrificed to implement the new project.

- Any new project will always entail an additional investment in short term assets like cash, debtors and stocks. The additional investment to some extent is reduced to the extent to which short-term liabilities like creditors increase. The increase in net working capital requirements becomes an outflow and when the project finally ends, investment in working capital can be recovered either fully or partly. This will become an inflow.
- Cash flows should always be estimated on an after tax basis.

Inflation, if persisting should always be treated on a consistent basis. This requires conversion of nominal cash flows into real cash flows.

Check your progress 5

1. Any _____will always entail an additional investment in short term assets like cash, debtors and stocks.

   a. investment

   b. new project

3.7 Sources of Long Term Funds

Tabular Presentation of Sources of Long Term Funds for capital dudgeting

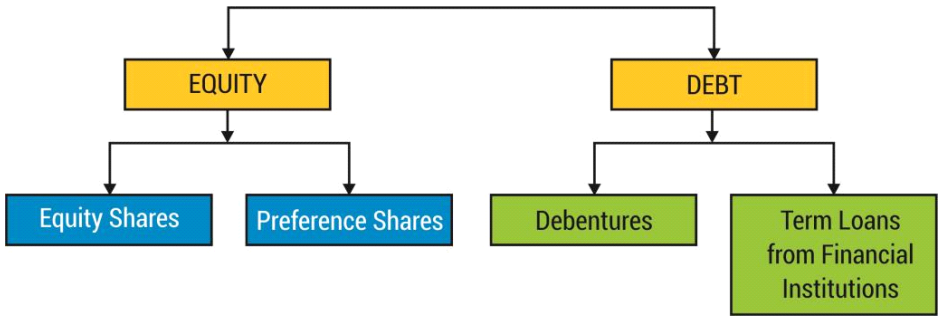

Fig 3.2 Source of long term fund

Brief Characteristics of the above Diagram:

- Interest on debentures or Term loans has to be paid whether there is any profit or not.
- Interest is a tax-deductible expense
- Dividend on preference shares is paid at fixed rate only if there is adequate profit after tax. If preference shares are cumulative then the dividends not paid will accumulate and will become payable in future.
- On equity shares, there is no fixed rate of dividend. Dividend may be skipped if profits are inadequate. Dividend may be very high if there is

abumper profit. Dividend can only be paid after preference dividend (including arrears if any) are paid and transfer to General Reserve Debenture and Redemption Reserve are made.

Check your progress 6

1. _____on debentures or Term loans has to be paid whether there is any profit or not.

   a. Payment

   b. Dividend

   c. Interest

3.8 Let Us Sum Up

In this unit we had a very detailed discussion on the Capital budgeting techniques which are considered to be a very important tool into the hands of an investor to know the feasibility of investment in an organisaition.

Here we studied that based on cash flows are more realistic than these based on accounting profits. NPV approach is considered theoretically superior to the Internal Rate of Return (IRR) approach.We further studied that the term Capital budgeting contains the relatively scarce, non-human resource of production enterprise, and budgeting, indicating a detailed quantified planning which guides future activities of an enterprise towards the achievement of its profit goals. Capital expenditure decisions are taken considering the points like -Creative search for Profitable opportunities, Long range capital planning, Short range capital planning, Measurement of project work, Screening and Selection, Control of authorized outlays, Post Mortem, Forms and Procedures and Economic of capital budgeting.We understood the three different kinds of capital budgeting proposals like – Replacement, Expansion, Modernization of Investment Expenditures, Strategic Investment Proposals, Diversification, and Research and Development.In this unit we covered different capital budgeting decisions that include- Accept-reject decisions, Mutually Exclusive Project decisions, Capital rationing decisions. There are different capitalbudgeting techniques which we studied in this chapter - Pay Back Method, Average Rate Of Return Method, Net Present Value (NPV) Method, Profitability Index Method, Internal Rate of Return Method (IRR). We also covered practical problems to understand capital budgeting decisions better.

So this unit is going to be of great help for the readers in understanding the concepts of various capital budgeting techniques and various other concepts associated to it.

3.9 Answers for Check Your Progress

Check your progress 1

Answers: (1-b), **(**2-a)

Check your progress 2

Answers: (1-d)

Check your progress 3

Answers: (1-b), **(**2-b)

Check your progress 4

Answers: (1-a), **(**2-b)

Check your progress 5

Answers: (1-b)

Check your progress 6

Answers: (1-c)

3.10 Glossary

1. **Capital Budgeting -** The process of planning expenditures on assets whose cash flows are expected to extend beyond one year.

3.11 Assignment

Explain in detail different capital budgeting techniques

3.12 Activities

Which are the sources of long-term funds?

3.13 Case Study

How are the capital budgeting decisions helpful in selection of any project? Explain with suitable example.

3.14 Further Readings

1. Fundamental of financial Management..... Dr. Prasanna. Chandra.
2. Financial Management..... P.V. Kulkami.
3. Financial Management .....Khan and Jain.
4. Financial Management..... Dr. Mahesh Kulkarni.
5. Financial Management..... Ravi Kishore.

BLOCK SUMMARY

In this block we had a very detailed study on working capital, inventory management and on various capital budgeting techniques.

In unit 1 and 2 we discussed about the working capital. These units have discussed in detail about working capital. It discusses about Meaning and Definition of Working Capital, Types of Working Capital, Factors Affecting Working Capital / Determinants of Working Capital, Operating Working Capital Cycle, Working Capital Requirements, Estimating Working Capital Needs and Financing Current Assets, Further unit 2 discusses about in detail about Inventory Management, Purpose of holding inventories, Types of Inventories, Inventory Management Techniques, Pricing of inventories, Receivables Management, Purpose of receivables, Cost of maintaining receivables, Monitoring Receivable, Cash Management, Reasons for holding cash, Factors for efficient cash management. Lastly in unit 3rd we discussed about the capital budgeting and its importance in a organisation it discusses about Capital Budgeting, Principles of Capital Budgeting, Kinds of Capital Budgeting Proposals, Kinds of Capital Budgeting Decisions, Capital Budgeting Techniques, Estimation of Cash flow for new Projects, Sources of long Term Funds.

So this block is going to help a lot the readers in explaining the other set of few very important topics of financial management.

BLOCK ASSIGNMENT

Short Answer Questions

1. Importance of capital budgeting.
2. Superiority of cash flow concept over accounting profit concept.
3. Comparison of NPV and the Internal Rate of Return (IRR).
4. Purposes of holding the inventories.
5. Types of inventories.
6. Economic Order Quantity (EOQ).
7. Working Capital required for different businesses.
8. Disadvantages of inadequate working capital.

Long Answer Questions

1. Discuss the various ways through which the working capital cycle can be shortening.
2. What are the factors for efficient cash management?
3. Explain the role of capital budgeting techniques in investment making decisions.
4. What are types of Capital Structure?
5. What are the techniques of Inventory Management?
6. Discuss cost of maintaining receivables.

Enrolment No.: ☐

1. How many hours did you need for studying the units?

Unit No.	**1**	**2**	**3**
Nos of Hrs			

2. Please give your reactions to the following items based on your reading of the block:

Items	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	☐	☐	☐	☐	_____
Language and Style	☐	☐	☐	☐	_____
Illustration used (Diagram, tables etc)	☐	☐	☐	☐	_____
Conceptual Clarity	☐	☐	☐	☐	_____
Check your progress Quest	☐	☐	☐	☐	_____
Feed back to CYP Question	☐	☐	☐	☐	_____

3. Any Other Comments

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FINANCIAL MANAGEMENT

BLOCK-4 INVESTMENT ANALYSIS AND FINANCIAL PLANNING

UNIT 1

INVESTMENT ANALYSIS

UNIT 2

FINANCIAL PLANNING- I

UNIT 3

FINANCIAL PLANNING- II

UNIT 4

DIVIDEND POLICIES

BLOCK 4 : INVESTMENT ANALYSIS AND FINANCIAL PLANNING

Block Introduction

In this block we shall focus on the investment analysis and various other financial planning decisions.

This block is divided into three units where unit 1st discusses about the topic investment analysis in details whereas unit 2nd& 3rd deals with financial planning.

Here in unit 1 we have discussed about Investment and Financing Decisions, Components of cash flows, Complex Investment Decisions

Unit 2 discusses about the following topics such as, Advantages of financial planning, Need for Financial Planning, Steps in Financial planning, Types of Financial planning, Scope of Financial planning .In unit 3Derivatives, Future Contract, Forward Contacts, Options, Swaps, Difference between Forward Contract and future contract, Financial Planning and Preparation of Financial Plan after EFR Policy is Determined. Unit 4 is prepared for dividend and dividend policies, where forms, legal provisions, types of policies are discussed.

This block will certainly help the readers in understanding other few very important concept of finance.

Block Objective

After learning this block, you will be able to understand :

- Investment and financing decisions.
- Distinguish between free cash flow and terminal cash flow.
- Arrive at net working capital.
- Explain financial planning.
- The financial planning process.
- Reason why financial planning is necessary.

Block Structure

Unit 1: Investment Analysis

Unit 2: Financial Planning- I

Unit 3: Financial Planning-II

Unit 4: Dividend Policies

Unit 1

INVESTMENT ANALYSIS

: UNIT STRUCTURE :

1.0 Learning Objectives

After learning this unit, you will be able to understand:

- Investment and financing decisions.
- The components of cash flow.
- Make complex investment decisions.
- Distinguish between free cash flow and terminal cash flow.
- Arrive at net working capital.

1.1 Introduction

The investment decisions for any firm should be based on Net Present Value (NPV) rule for which we need to discount the cash flows. Estimation of cash flows is an important step in investment analysis. A fair amount of efforts in terms of time and money should be invested by management of a company in obtaining accurate cash flow estimates. The cash flows are estimated by the financial manager based on the information provided by the experts of various departments like production, marketing, accounting, economics etc. and he is also responsible for checking the relevance and accuracy of this information.

1.2 Investment and Financing Decisions

An investment may be financed by a firm either by debt or equity, or partly by equity and partly by debt. However, it should be noted that any earnings or proceeds from debt or equity is not treated as investment's inflows. Likewise, the payments of principal, interest, dividends etc are not considered as investment's outflows and hence are not taken into account while computing investment's net cash flows of the company.

Debt and equity required to finance a firm's investment is provided by creditors and shareholders' respectively. So, they expect the rate of return based on the amount of risk they take. Creditors get the returns in terms of fixed payments whereas the cash flows that remain after the other payments are made is passed on to the shareholders. Clearly, the risk taken by shareholders is more than that of the creditors and so, the rate of return expected by the shareholders is more than that of creditors. Also, the interest paid to the creditors is tax deductible whereas the dividends paid are not. As a result, the after-tax cost of debt is less than that of the rate of interest. This after-tax weighted average cost of equity and debt is the discount rate which indicates the expected payments to be made to the creditors and the expected dividends to be given to the shareholders. By deducting the weighted average cost of debt and equity from investment's cash flows, we ensure that the cash flows yielded from investments are sufficient enough to pay interests to the creditors and dividends to the shareholders. Any residual cash after servicing the equity and debt capital adds directly to the wealth of shareholders.

Check your progress 1

1. _____and equity required to finance a firm's investment is provided by creditors and shareholders' respectively.

   a. Finance

   b. Capital

   c. Debt

2. An _____may be financed by a firm either by debt or equity, or partly by

   a. equity and partly by debt

   b. Investment

3. As a result, the _____cost of debt is less than that of the rate of interest.

   a. after-tax

   b. Before-tax

4. Any residual cash after servicing the equity and debt capital adds directly to the _____of shareholders.

   a. Health

   b. wealth

1.3 Components of Cash Flows

The three components of a typical cash flow are

1. Initial Investment
2. Annual net cash flows
3. Terminal cash flows

1. Initial Investment

The net cash expenditure made by the company during the period in which an asset is purchased by a company is called its initial investment. The gross expenditure or the asset's original value comprises of accessories as well as spare parts

and also the installation charges form the major chunk of the initial investment. Original value is considered for the calculation of annual depreciation. The difference between the original value and depreciation forms the book value of the asset. Also, if the assets are purchased with the aim of increasing revenues, then investment in net working capital will also be required. So, the initial investment is the sum of gross investment and investment in working capital.

Also, in case old assets are sold to buy new ones, then the cash obtained by selling the old assets should also be subtracted to obtain the initial investment figure.

Initial investment also include miscellaneous expenses such as amount spent on electrification, water supply as well as expenses on preliminary and pre-operative activities (that must be completed before the company's actual work stars) like promotional expenses, brokerage or commission if any etc.

Let us take an example of a manufacturing company, say, ABC Pvt. Ltd. Supposing the project requires land and development of site for building the factory, the initial investments of the company would be as follows:

(₹ Lakh)	
Property and Site Development	70
Building Factory	900
Plant and Machinery	3630
Erection Expenses	300
Miscellaneous Expenditure	250
Preliminary and pre-operative expenses	100
Contingency	300
	5550
Net Working Capital	500
Total Initial Investment	6050

1. Net Cash Flows

Once the initial cash outlay has been done, the investments should start generating cash flows. Estimation of cash flows should always be carried on after-tax basis.

Net cash flow (NCF) of a company is nothing but the difference between receipts of cash and payment of cash and is inclusive of taxes. Though NCF primarily consists of the annual cash flows that occur from the investment operations, any changes in net working capital as well as capital expenditures may also affect it.

To understand NCF in more detail, let us take a simple case where in cash flows occur only from operations. Supposing that all sales i.e. revenues are generated in cash and payment of all expenses is also made in cash, then NCF will be defined as

Net cash flow = Cash Revenues – Cash Expenses = Cash Profit – Tax

Note that taxes are deducted for computing NCF. The calculation of taxes is done on the basis of accounting profit in which depreciation is considered as deductible expense.

Depreciation and Taxes

Any non-cash item is known as depreciation and needs to be considered in computation of NCF i.e. after-tax cash flow. It is an allocation of asset cost. It does not require any cash outflows and involves an accounting entry.

Calculation of depreciation is done as per income tax rules and is considered as deductible expense for tax calculation. Since it decreases the tax liability of a firm, it impacts the cash flows indirectly. The outflow of cash for the saved taxes is in fact the cash inflow and the saving that occurs due to depreciation is called depreciation tax shield.

Net working Capital

The cash receipts and payments may differ due to changes in working capital elements like inventories, receivables and payables. For better understanding, let us consider the following scenarios:

- **Change in receivable:** The payments delayed by the customers will lead to increased receivables. Since the revenues are mostly generated through cash sales, the cash inflows will be overstated. Hence, actual cash receipts should be computed by subtracting (in case of increased receivables) from or by adding (in case of decreased receivables) to the expenses.
- **Change in inventory:** The Company may make payments in terms of cash for raw material and production of output that is unsold. Cash payments made for unsold material is not considered as an expense resulting in understating the actual cash payments. Hence, computation of actual cash payments should be done by adding (increased inventory) to or subtracting (decreased inventory) from the expenses.
- **Change in payable:** The delay made by the firm in payment for materials and sales would lead to increased account payables. And since account payables are considered as expenses, they lead to overstating actual cash payments. Hence, actual cash payments should be computed by subtracting (in case of increased account payables) from or by adding (in case of decreased account payables) to the expenses.

Thus, it is evident that the changes in the elements of working capital should be considered while calculating the net cash inflow. Now, here, instead of adjusting individual components of working capital, simply the change in net working capital can be adjusted. i.e. we can simply adjust the difference between change in current assets and that in current liabilities.

Free Cash Flows

In the life-cycle of an investment project, reinvestment of cash flows might be need in addition to the initial investments. This additional capital expenditure causes the net cash outflow to decrease.

The free cash flow is defined as

Free cash flow = after-tax operating income + depreciation – net working capital – capital expenditure.

In short, the free cash flow is nothing but the cash flow which is available to serve both the lenders (creditors) as well as owners (share holders) who have provided

funds for financing investments. Free cash flow should be deducted from an investment's NPV. (Net Present Value)

2. Terminal Cash Flows

Salvage Value (SV)

The market value of an investment at the time of its sale is called its salvage value and is a typical example of terminal cash flows. In this, the cash earnings or proceeds obtained from the sales of the assets is considered as cash inflow in the terminal or last year. According to the current taxation law in India, there is no tax liability on the sale of an asset.

In case of replacement of an existing asset, the current cash inflow will be increased by its salvage value or the initial cash outlay of the new asset will be decreased.

Following are the effects of salvage values of new and existing assets:

- The cash inflow in the terminal period of the new asset will be increased by the salvage value of the new asset.
- The initial outlay of the new asset will be reducedby the salvage value of the existing asset.
- The cash flow of the new investment will be reduced at the terminal period by the salvage value of an existing asset at the end of its normal life.

Release of Net Working Capital

Apart from the salvage value, the release of net working capital may also be included in terminal cost flows. It can be assumed that the funds involved in the net working capital at the initial stages of investment would be eventually released at time of termination of the investment. The net working capital may keep changing during the life of the investment and such changes in working capital should definitely be considered during computation of annual net cash flows. Increased net working capital indicates cash outflow while decreased net working capital indicates cash inflow.

Check your progress 2

1. The net cash expenditure made by the company during the period in which an asset is purchased by a company is called its _____

   a. Investment

   b. initial investment

   c. final investment

2. Original value is considered for the calculation of _____depreciation

   a. annual

   b. Half yearly

3. The payments delayed by the customers will lead to _____ receivables.

   a. increased

   b. Decreased

4. The delay made by the firm in payment for materials and sales would lead to increased _____payables.

   a. Cash account

   b. account

5. The _____value of an investment at the time of its sale is called its salvage value and is a typical example of terminal cash flows.

   a. Home

   b. market

1.4 Complex Investment Decisions

Many-a-times a company comes across complex investment situations and need to choose one of the several alternatives. In such situations, the usage of NPV can be extended to handle such complex investment decisions.

Existing asset replacement

The decisions to replace an existing asset must be monitored by necessity and economic considerations. An existing asset must be replaced when there is availability of more economic alternative.

Normally, many companies approve new machinery only when the existing one refuses to perform well. In other words, they follow a simple norm of replacing the machinery only when the old one is totally out-of-service and has gone beyond repair.

Cearly, it's not the firm who decides when to replace, but the machinery decides for them and so is extremely incorrect and wrong policy of replacement.

Based on the economic consideration, management should decide when to replace.

An economic analysis may tell the company to replace a machine say after 5 years. But, if the company replaces the machine say after 15 years when it has gone beyond repair, then the company not only incurs extra costs but also loses extra profit for 10 years.

Investment decisions under inflation

For the prudent investment decisions, it is always wise to assume inflation for all the practical investment purposes. Inflation should be considered while estimating cash flows and discount rates.

Since the investment decisions are taken for a long term and in India (being a developing country) the two digit inflation number is common and hence inflation should be factored in the decisions related to long term investments.

Inflation has adverse effect on the working capital. Increasing costs like raw material, more investment is required for raw materials and receivables.

A wise investment policy takes into account the rising prices (inflation) and this should be considered while taking capital budgeting decisions.

Investment decisions using capital rationing

Due to limited financial resources, the companies have to select profitable projects from the various choices available.

There are 2 types of capital rationing:

1. Internal capital rationing
2. External capital rationing

1. Internal capital rationing : Under this rationing profitable allocation of funds is done. In case of shortage of funds selection of projects is done on the basis of profitability of respective project.

Example 1:

Assume the amount provided for investment is limited to 50,00,000. Determine selection of projects.

	Project	Investment (Amount)	Total Investment	Net Present Value
Capital Rationing Solution	A	20,000,000		4,000,000
	B	20,000,000		3,800,000
	C	10,000,000	50,000,000	1,500,000
Best Solution	D	10,000,000		1,000,000
	E	8,000,000	68,000,000	400,000
	F	8,000,000		300,000

Under capital rationing, only projects A through C calling for 50,000,000 investment although projects D and E have positive net present value they will not be accepted.

Example 2 :

Project	I. (milss)	NPV	PI	Rank
A	500	110	0.22	1
B	150	-7.5	-0.05	6
C	350	70	0.20	2
D	450	81	0.18	4
E	200	38	0.19	3
F	400	20	0.05	5

In case the cash available for capital investment is 1,100m, the projects A, C and E will be selected.

Exhibit – Capital Rationing

Source – Financial analysis revised, cbdd.wsu.edu

2. External capital rationing

External capital rationing is all about mismatches in capital markets. That means there are companies which are dependant heavily on debt financing and so they

fear losing the control if they go for equity financing. In this case, there are limited choices available for the company in selecting the projects.

There are companies in the area of biotechnology, gaming industry, nano technology where the companies are upbeat about the profitability and sustainability of the projects. But the investors think exactly opposite and so, it would be difficult for the company to raise the equity capital.

Do companies face capital rationing problem in India'

- In a study of Indian Companies, it is revealed that most companies do not reject projects on account of capital shortage. They face the problem of shortage of funds due to the management's desire to limit capital expenditures to internally generated funds or the reluctance to raise capital from outside.
- Most companies do not use mathematical approach to select projects under capital following. The basis to choose projects under capital rationing are :
  - Profitability
  - Priorities set by management
  - Experience
- Some companies satisfy the criteria of profitability and strategic considerations for allocating limited funds.

Generally companies do not reject profitable projects under capital rationing; they postpone then till funds become available in future.

Check your progress 3

1. _____means there are companies which are dependant heavily on debt financing and so they fear losing the control if they go for equity financing.

   a. External capital rationing

   b. Internal capital rationing

2. An economic analysis may tell the company to replace a machine say after _____ years.

   a. 1

   b. 5

3. A wise investment policy takes into account the _____(inflation) and this should be considered while taking capital budgeting decisions.

   a. rising prices

   b. Discount Prices

4. _____has adverse effect on the working capital. Increasing costs like raw material, more investment is required for raw materials and receivables.

   a. compression

   b. Inflation

5. Normally, many companies approve new machinery only when the existing one _____to perform well.

   a. Refuses

   b. Uses

1.5 Let Us Sum Up

In this unit we had a very detailed explanation on few of the very crucial aspects of financial and investment decisions.

Here we studied about the three important cash flows - Initial Investment, Annual net cash flows And Terminal Cash Flows. Here we even studied about the net cash expenditure made by the company during the period in which an asset is purchased by a company is called its initial investment. We also studied the equation Net cash flow = Revenues – Expenses – Tax. Depreciation is non cash expenditure and needs to be considered for the part of net cash flow. In this unit we even studied and learned the equation of free cash flow that is

Free cash flow = after-tax operating income + depreciation – net working capital – capital expenditure; which is important for capital investments. Not only this we even studied about complex investment decisions like Existing asset replacement, Investment decisions under inflation, Investment decisions using capital rationing (which includes internal and external rationing) are the part and parcel of today's financial management and it is imperative for the management student to study all these techniques to arrive at the decision.

So this block is going to be of great help for all the readers in understanding few of the very important concepts.

1.6 Answer for Check Your Progress

Check your progress 1

Answers: (1-c), (2-b), (3-a), (4-b)

Check your progress 2

Answers: (1-b), (2-a), (3-a), (4-b), (5-b)

Check your progress 3

Answers: (1-a), (2-b), (3-a), (4-b), (5-a)

1.7 Glossary

1. **Yield to Maturity (YTM) -** The rate of return earned on abond if it is held to maturity.

1.8 Assignment

Explain the three components of the typical cash flow.

1.9 Activities

Describe the complex investment decisions.

1.10 Case Study

Read the annual report of a public limited company and study its cash flow statement and note your observations.

1.11 Further Readings

1. Financial management- ICFAI.
2. Financial management – I.M.Pandey.
3. Financial management – G. Sudarshan Reddy.

Unit 2

FINANCIAL PLANNING- I

: UNIT STRUCTURE :

2.0 Learning Objectives

After learning this unit, you will be able to understand:

- Explain financial planning.
- Realize the importance of financial planning.
- Discuss financial planning process.
- Describe the scope of financial planning.
- Reason why financial planning is necessary

2.1 Introduction

Today, everybody should have his or her financial plan which will give a road map for the secure future.

According to McGee Financial, Financial Planning is "a process of money management that may include any or all of several strategies, including budgeting, tax planning, insurance, retirement and estate planning, and investment strategies. In effective financial planning, all elements are coordinated with the aim of building, protecting, and maximizing net worth".

The derivatives are most modern financial instruments in hedging risk. The individuals and firms who wish to avoid or reduce risk can deal with the others who are willing to accept the risk for a price. A common place where such transactions take place is called the 'derivative market'.

2.2 Financial Planning

2.2.1 Advantages of Financial Planning

1. Upgraded living
2. Money management
3. Consumption
4. Securing future
5. Building wealth

1. **Upgraded living:** A person can maintain income and expenditure if he knows his financial plan. Due to increase in income and consumption pattern, the standard of living is increasing.
2. **Money management:** Any income can be either saved for the future purpose or consumed for the current needs financial planning helps in guiding the person when to invest and when to consume.
3. **Consumption:** Consumption includes spending money on the basic necessities like food, shelter, and clothing. It also includes buying luxury and semi-luxury products. Normally, the average propensity to consume (the average inclination of an individual to spend rupee of income on the current needs than to save for the future needs) decreases when the incom increases. This results in increased saving and so, financial planning helps the person in chalking out the plans for the future.
4. **Securing Future:** As we have seen in the above point that the propensity to consume decreases when the income increases resulting into increased savings. This increased saving is invested in different financial and real assets. The idea is to give higher returns on these investments to safeguard from increasing prices (inflation) and from rainy days.
5. **Building Wealth:** Financial planning helps a person to create a plan for the future by investing in assets and keeping the current income intact. There are many luxurious products like car, which, in long term may not give any returns; however, it provides convenience to the person. There is another asset like real estate which gives higher returns to the person by capital appreciation.

   By having the right mix of such assets, an individual can build the wealth over time with the help of proper financial planning.

2.2.2 Need for Financial Planning

Every individual is different in his educational background, age, gender, attitude, values, and basic needs. Needs can be different based on the above factors.

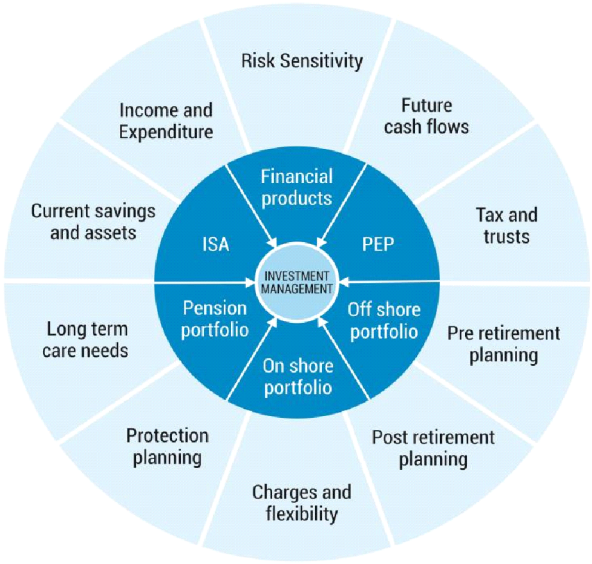


Fig 2.1 Investment Planning

- Real estate Planning
- Credit management
- Tax management
- Managing cash and savings
- Health and life insurance
- Investing in equities and fixed income securities
- Investment in mutual funds
- Contingencies
- Retirement planning
- Marriage
- Buying luxurious and domestic products

2.2.3 Steps in (Process of) Financial Planning

Any financial planning process should be systematic, result-oriented and easy to follow.

Following are the steps in financial planning:

Fig 2.2 Steps in Financial Planning

- The first important step in financial planning is to have a clear picture of your goals and finalize those goals. Factors like expected age of retirement, income expected after retirement, amount of income you would like to keep for your surviving better half etc. can help you define your goals more clearly.
- Second step involves gathering as much information as possible. The information should be pertaining to insurance policies, tax returns, wills, trusts etc. The more information, the better will be your financial plan.
- Once you have adequate information, explore and process that information. Appropriate advisors may be consulted for the same.
- Adopting a good all-inclusive financial plan can help you meet your goals more easily as it provides you with appropriate strategies and examples.
- Once the plan has been decided, next important step is to execute that plan. Plan can be executed by using the strategies which you are comfortable with.
- Finally, the plan must be monitored and altered periodically with the changing conditions.

2.2.4 Types of Planning

Following are the different types of planning according to his or her requirement at the different stages of life.

- Asset acquisition planning
- Liability and insurance planning
- Savings and investment planning
- Employee benefit planning
- Tax planning
- Retirement and estate planning

2.2.5 Scope of Financial Planning

Following are the areas that come under scope of financial planning:

- Central and state government
- Tax policies
- Regulatory environment
- Businesses
- Consumer preference
- Macroeconomic factors
- Business cycles
- Change in prices and interest rates

Check your progress 1

1. _____includes spending money on the basic necessities like food, shelter, and clothing.

   a. Saving

   b. Investment c. Consumption

2. Any _____process should be systematic, result-oriented and easy to follow.

   a. Marketing planning

   b. financial planning

3. _____planning helps a person to create a plan for the future by investing in assets and keeping the current income intact

   a. Financial

   b. Marketing

4. A person can maintain _____if he knows his financial plan.

   a. Expenditure

   b. income and expenditure

5. Which of the following does not comes under the scope of Financial Planning.

   a. Tax policies b. Business

   c. Central govt d. schools

2.3 Let Us Sum Up

In this unit we discussed about financial planning. We discussed that it is a process of money management that may include any or all of several strategies, including budgeting, tax planning, insurance, retirement and estate planning, and investment strategies. In effective financial planning, all elements are coordinated with the aim of building, protecting, and maximizing net worth.

We studied the various advantages of financial planning.The benefits are Upgraded living, Money management, Consumption, Securing future and Building wealth among others. Financial planning is more than money management; it is all about managing the current needs and to be prepared for the future needs and the contingencies as well. An individual needs to do financial planning mainly for the reasons like - Real estate Planning, Credit management, Tax management, Managing cash and savings, Health and life insurance, Investing in equities and fixed income securities, Investment in mutual funds, Contingencies, Retirement planning, Marriage, Buying luxurious and domestic products. More, we discussed on the financial process and studied that the financial process starts with a clear picture of your goals and then gathering as much information as possible. Third step is to have appropriate advisors. The next step is adopting a good all-inclusive financial plan and then to actually execute that plan. Final step is to monitor and taking the corrective steps.

So this unit is going to be of great help for students in understanding more about financial planning and making decisions in this regard.

2.4 Answers for Check Your Progress

Check your progress 1

Answers: (1-c), (2-b), (3-a), (4-b), (5-d)

2.5 Glossary

1. **Zero Coupon Bond -** A bond that pays no annual interest but is sold at a discount below par, thus providing compensation to investors in the form of capital appreciation.

2.6 Assignment

Explain the financial planning process with all the steps.

2.7 Activities

What are the advantages of financial planning'

2.8 Case Study

Write a financial plan for yourself stating the different stages in your life and how do you plan to meet the requirements at different stages including education, marriage, buying a house, health and other contingencies.

2.9 Further Readings

1. Personal Financial Planning – ICFAI University.

Unit 3

FINANCIAL PLANNING-II

: UNIT STRUCTURE :

3.0 Learning Objectives

After learning this unit, you will be able to understand:

- Basic derivatives
- That practical financial planning becomes easier if we project the financial statements for the near future.
- How EFR can be calculated
- How funds can be raised through different sources.
- The Difference between various derivative products

3.1 Introduction

Understanding of financial planning and preparation of financial plan after EFR (External Funds Requirements) policy is determined.

This unit will begin with introduction of derivatives. We will also learn how to prepare financial plans to support a targeted level of sales.

3.2 Derivatives

The derivatives are most modern financial instruments in hedging risk. The individuals and firms who wish to avoid or reduce risk can deal with the others who are willing to accept the risk for a price. A common place where such transactions take place is called the 'derivative market'.

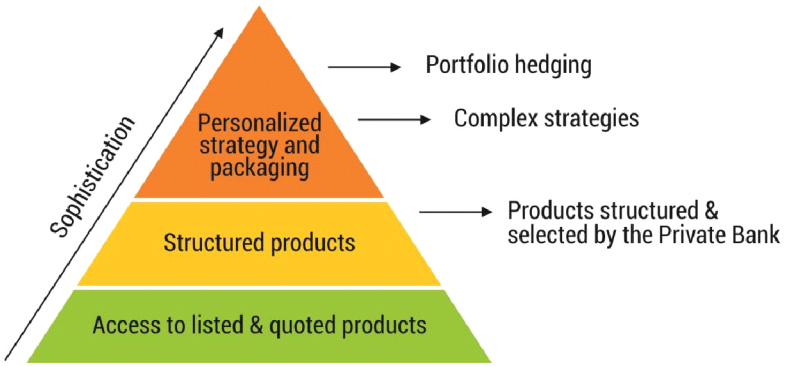


Fig 3.1 Structured and Derivative Investment Products

Source – BNP Paribas website

Derivatives are those assets whose value is determined from the value of some underlying assets. The underlying asset may be equity, commodity or currency.

They derive their value from some underlying instrument and have no intrinsic value of thereby won. Forwards, futures options, swaps, caps and floor are some of more commonly used derivatives.

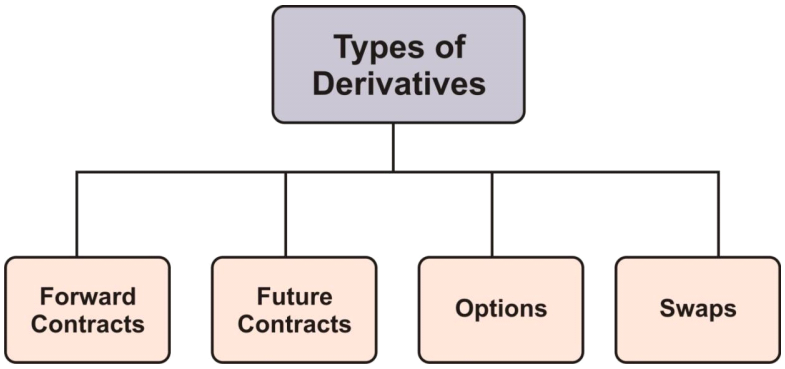


Fig 3.2 Future Contracts

It is a standardised agreement to deliver or receive a specified amount of specified currency at specified price (exchange rate) and the date. The buyer of the future contract receives the currency while the seller of the future contract delivers the currency.

Only the members of the future exchange can engage in future transactions. The members of future exchange can be classified as either commission brokers or floor traders. Floor brokers execute order for their customers, while others work independently. Floor brokers (also called locals) trade on their won account.

A future contract provides both a right and an obligation to buy or sell a standard amount of a commodity, security or currency on a specified future date at price agreed when the contract is entered into. A key element of any successful traded futures contact must be the characteristic of standardisation; it is this element which makes the agreement tradable. The only negotiable, changeable element must be the price agreed when entering into the contract.

- It is a standardised specific sized contract.
- The contract has a standard maturity date. At International Money Market (IMM) Chicago, contracts mature on the third Wednesday of March, June, September and December.

- Collateral requirements: the purchaser must deposit a sum as initial deposits called 'margin' as collateral. In additions to initial margin, the customers are required to deposit the maintenance margin.
- Customers pay commission to their brokers to execute the order.
- Clearing house as counter party- All future contracts are agreement between clients and the exchange clearing house rather than the two parties involved in the transaction. Thus there is no default risk.
- Settlement on the final date of delivery. Only 5% of the contracts are settled by physical delivery of foreign exchange between buyers and sellers offset their original position prior to delivery date by taking an opposite position.

  Future price = spot price + costs of carrying

  Costs of carrying is the aggregate of storage, insurance, transport costs, finan e costs etc.

Types:

- **Commodity futures:** Where the underlying is a commodity or physical asset such as wheel, cotton, butter, eggs etc. such contracts began traded on Chicago Board of Trade in 1860's. India too futures on soybean, black pepper, spices have been trading for long.
- **Financial futures:** Where the underlying such as foreign exchange interest rates shares, treasurybill or stock index.

Participants in future market

- **Hedgers:** Hedgers wish to eliminate or reduce the price risk to which they are already exposed. The hedging function solely focuses on the role of transferring the risk of price changes to other holders in the futures markets.
- **Speculators:** Speculators are those classes of investors who willingly take price risks to profit from price changes in the underlying.
- **Arbitrageurs:** They profit from price differential existing in the markets by simultaneously operation in two different markets.

3.2.2 Forward Contacts

A forward contract involves an agreement today to buy or sell a specified amount of foreign currency at a specified future date at a rate agreed upon today (the forward rate). The typical forward contracts are for 1 month, 3 months or 6 months. With 3 months being most common. Forward contracts for longer periods are not as common because of the great uncertainties involved.

It is a fixed price contract made today for delivery of a certain amount of currency at a specified future date. The specified date is the settlement date. The agreed upon price is termed as forward rate.

No money changes hands today. The exchange takes place on future date. The forward contract stipulates that the full amount need not be exchanged on the settlement date. Only the difference between the forward rate and the spot rate prevailing on settlement date will be paid.

Hedging and speculation are the main activities, which pertain to forward market.

An agreement made today between abuyer and seller to exchange the commodity or instrument for cash at a predetermined future date a price agreed upon today.

A forward foreign exchange contract used to hedge a future payment in a foreign currency entails delivery of a certain amount of one currency in exchange for a certain amount of another currency at a certain future date.

A fixed-price contract made today for delivery of a certain amount of a currency at a specified future date. The specified date is the settlement date. The agreed upon price is termed the forward rate.

No money changes hands today. The exchange takes place on a future date. The forward contract stipulates that the full amount need not be exchanged on the settlement date. Only the difference between the forward rate and the spot rate prevailing on the settlement date will be paid.

Forward exchange contracts may be used to hedge a future import payment or export receipt. It can also be used for speculation. The bank may engage in a forward contract as a service to customer the bank will then offset the forward seeking to profit form the spread between currency bought and currency sold. The financial- market participants seek to take advantage of an apparent inefficiency in the currency or money markets.

Forward exchange contracts are amazingly versatile. They are available in two dozen or more currencies and for maturities ranging from one week to several years. Many individuals and even institutions are drawn to the currency future market, because it entails far less default risk.

Default risk in forward contracts arises because such a contract commitment for future performance and one or the other party may be unwilling or unable to honor that commitment.

On the settlement date, one party in effect owes the other party a net Financial amount. The net amount and who owes whom cannot be determined in advance. It depends on the direction and extent to which the currency has moved in the interior.

E.g. on march 1, A agrees to buy one-pound sterling from B. 3 months forward at a price of $ 1.75. as a convenience to both, they agree that on the settlement date (June 3) only the net amount will be exchanged the net amount is defined to be the difference between the forward date ($ 1.75) and the spot rate, whatever it is, in 3 months time (June 1). If the pound is above $ 1.75, B pay A the difference; if the spot rate turns out to be below $ 1.75, A pays B the difference. Either way, the payment will take place in dollars again, as a convenience.

3.2.3 Options

Contracts between sellers and buyers, which obligate the former to deliver and entitle the latter without obligation to buy stated quantities of assets with stated quality at some future dates at todays contracted prices.

The option market is not only extended to stock dealings but also to foreign currencies, commodities etc.

An option is right but not an obligation to enter into transaction.

Features:

- The option is exercisable only by the owner, namely the buyer of the option
- The owner has ltd. liability.
- Owners of options have no right affordable to shareholders such as voting right and dividend right.
- Options have high degree of risk to the option writers.
- Flexibility in investors needs.
- No certificates are issued by the company.

There are 2 types of options:

- Call Option
- Put Option

A put option gives the right to sell the share at a further date at the pre-determined price. A call option gives a right to buy the share at predetermined price at future date. Both these options are derivatives or secondary instruments. The value of which will be different from the value of the share on which it is

based.

3.2.4 Swaps

"A swap can be defined as the exchange of one stream of future cash flow with another stream of cash flows with different characteristics."

"A swap is an agreement between two or more people/ parties to exchange sets of cash flows over a period in future."

Swaps can be divided in two types:

- **Currency swaps:** the currency swaps are agreements whereby currencies are exchanged at a specified exchange rate and specified intervals. The basic purpose of swaps is to lock in the rate.

Interest Rates Swaps: An interest Rate Swap is an agreement whereby one party exchange one set of interest rate payments for another. Most common arrangement is an exchange of fixed interest rate payment for another rate over a time period. The interest rates calculated on notions calculated of principals

Check your progress 1

1. The _____are most modern financial instruments in hedging risk. a. Swaps

   b. Derivatives

   c. Options

2. "A swap is an agreement between two or more people/ parties to _____sets of cash flows over a period in future."

   a. exchange

   b. Buy

3. An option is _____but not an obligation to enter into transaction.

   a. Wrong

   b. Right

4. _____, one party in effect owes the other party a net amount.

   a. Buy date

   b. On the settlement date

5. The _____, changeable element must be the price agreed when entering into the contract.

   a. only negotiable

   b. Market

3.3 Difference between Forward Contract and Future Contract

Forward contract	Future contract
It can be for any amount as per the requirement of individual parties.	A future contract is not available for a particular amount, because it is required to be for a prescribed amount only.
It can be in non-standardized form at.	It is always in a standardized format.
It is not regulated through any statutory	It is regulated by an exchange legally empowered to enforce the contract.
A forward contract is not transferable to the other partied. It can be cancelled or extended by mutual consent of the parties. Therefore it is not very liquid or flexible respect in respect of the amount for it.	It can be traded officially on the exchange on which it is enforceable. Therefore a future contract can be considered more liquid even though there is no flexibility in it's amount.
Forward contract were originally designed without involving any marginal payment, but these days banks insist on some marginal deposit. These are not periodical variation payments and therefore there are greater risks of default.	There is always a margin payment at the time of entry and there are periodical variation payments, which are payable by one party and receivable by another party. These variation payments proved an umbrella of protected to both the parties.

Check your progress 2

1. _____ can be for any amount as per the requirement of individual parties.

   a. Future contract

   b. Forward contract

2. _____, in any case, need to be translated in future cash flows.

   a. Sales forecasts

   b. Buy forecasts

3. The _____established will become financial goal and should be taken as abenchmark for evaluating performance in subsequent years.

   a. financial plan

   b. Marketing Plan

4. _____is regulated by an exchange legally empowered to enforce the contract.

   a. Forward contract

   b. Future Contract

3.4 Financial Planning and Preparation of Financial Plan after EFR Policy is Determined

Financial statements are useful in understanding past as well as providing the starting point for developing financial plan for the future.

Financial plans begin with the firm's product development and sales objectives. A corporate entity can possibly aim at either a normal growth plan, which aims at a percentage growth in sales. This probably does not aim at making inroads into competitor's share. If it is an aggressive growth plan which calls for increased market share or entry into new areas and new products will call for heavy investment in machinery, equipment, land, building, etc.

Sales forecasts, in any case, need to be translated in future cash flows. If future operating cash flows are insufficient to cover the planned investment in fixed assets and working capital and to meet planned dividend payments, then the balance has to be made good by borrowing or by the issue of new shares.

In chapter I, we had discussed EFR (External Funds Requirement). This was an introduction to what is now understood as financial plan. We will sum up four steps involved:

Step 1: Project next year's operating cash flow assuming the agreed percentage of increase in sales.

Step 2: Project additional investment in working capital and fixed assets that will be necessary to support the higher level of activity. At this stage, also take into consideration the dividend payout.

Step 3: Observe the difference between the projected operating cash flows as per step 1 and projected uses of funds as per step 2. The difference represents the cash to be raised either by borrowing or by issuing shares.

Step 4: Once it is decided about mix of debt and equity it is necessary to prepare a projected balance sheet that will incorporate new levels of assets, revised retained earnings and new debt as well as equity.

In actual practice it is possible to set up a spreadsheet, which can project for the next five to seven years in terms of projected income statements and projected balance sheets.

The financial plan established will become financial goal and should be taken as abenchmark for evaluating performance in subsequent years.

The process of financial planning will force the management to combine effects of the firm's investment as well as financing decisions. This is very important because these functions, namely, investment, financing and dividend are not independent of each other and must interact.

It should be carefully noted that the financial plan model does not necessarily lead to optimal financial strategy. In actual practice, it has been experienced that finan-

cial planning generally proceeds by trial and error. The primary purpose of financial statements is to produce accounting statements but good finance managers can make use of the financial plan to achieve maximum possible growth in shareholder's network.

External Funds Requirement [EFR] leading to financial planning.

The EFR Model assumes that if the sales have to go up then the investments in all assets should proportionately go up.

This is generally true for the Current Assets but not true for Fixed Assets and therefore the Model is defective to some extent.

The Model also assumes that if the sales go up, spontaneous liabilities will also go up proportionately. This is also logical. A formula is available for calculating EFR but it is advisable to understand the fundamentals behind it. We can calculate EFR by preparing a projected B/S for the sales, from the past turnover.

Financial Forecasting Planning

Steps to Calculate EFR :

(i) Calculate conversion factor and determine increase in EFR

(ii) Calculate retained earning and add it to previous year balance.

(iii) Calculate all assets and liabilities as per conversion factor.

(iv) Remaining funds to be arranged from equity share capital.

(v) Don't apply CF to equity share capital and retained earnings.

Problems for Practice

1. The balance sheet of Pradhan Company at the end of year 2020, which is just over, is given below: (R '000)

BALANCE SHEET

Share Capital	50	Fixed assets	130
Retained earnings	60	Inventories	90
Long term loans	80	Receivables	80
Short term borrowings	60	Cash	20
Trade Creators	50		
Provisions	20		
	320		320

The sales for the year just ended were R 4,00,000. The expected sales for the year 2021 are R 5,00,000. Net profit margin is 5% and the dividend pay out ratio is 50%.

Required:

1. Determine the external funds requirement for Pradhan for the year 2021.
2. The Balance sheet of Damodar Chemicals Limited as on 31st March, 2020 is given below:

Liabilities	Rs. In Lakhs	Assets	Rs. In Lakhs
Share Capital	75	Fixed Assets	200
Retained Earnings	90	Inventories	100
Term Loans	40	Receivables	75
Short-term Bank	100	Cash	25
Borrowings Accounts Payable	70		
Provisions	25		
	400		400

The sales of company for the year ending 31.3.2020 amounted to R 500 lakhs with a profit margin of 6 per cent. The dividend payout ratio was 50% and the tax rate was 60%. The company expects its sales to rise by 30% for the year 2020-21. The profit margin ratio, the tax and the dividend payout ratio are also expected to remain unchanged.

Required:

- Estimate the external funds requirement for the year 2020-21.

Draw up the projected balance sheet as at 31st March, 2021.

2. The balance sheet of Pragathi Limited as on 31st March, 2020 is given below:

(R In lakhs)

Liabilities	Rs.	Assets	Rs.
Share Capital	25	Net Fixed Assets	100
Retained Earnings	35	Inventories	50
Term Loans	60	Accounts Receivables	35
Bank Borrowings Current Liabilities	30	Cash	15
Accounts Payable	40		
Provisions	10		
	200		200

Net sales for the year 31st March, 2020 was R 400 lakhs and the projected sales for the year 2020-21 is R 500 lakhs. The net profit margin on sales is 5% and dividend payout ratio is 60%. The tax rate for the company is 50%.

a. Estimate the external funds requirement for the next year (2020-21)

b. Prepare the following statements, assuming that the external funds would be raised equally from term loans and short-term bank borrowings.

- Projected balance sheet
- Projected income statement

ANSWERD :

(1) Pradhan Company :

(a) Conversion Factor = $\frac{\text{New Sales}}{\text{Old Sales}} = \frac{5,00,000}{4,00,000} = 1.25$

(b) Fuarease in EFR = Old total assefs × CF – Old assets

= 320 × 1.25 – 320.

= 400 – 320

= 80

(c) Estimated refained eavnings :

Sales 5,00,000 × NP ratio 5% = 25,000

lers : Dividend pay out 50% $\frac{12,500}{12,500}$

(d) EFR :

Particular	**OLD**	**CF**	**NEW**	**Increase**
Assets FA	130	1.25	162.50	32.50
Inventories	90	1.25	112.50	22.50
Receivables	80	1.25	100.00	20.20
Cash	20	1.25	25.00	5.00
	320	**1.25**	**400**	**80**
Liqbihpes				
Long term loan		1.25	100.00	20.00
Short terms borromings	50	1.25	62.50	12.50
Trode creditors	50	1.25	62.50	12.50
Pronsions	20	1.25	25.00	5.00
To be spared from	**210**	**1.25**	**262.50**	**52.50**
Retained earnings & equlity capital	110		137.50	24.50
less : Retained earnings	60		72.50	*12.50
Equity share capital	50	-	65.00	15.00
Capital	**110**		**131.50**	**27.50**

(2) Damodar Chemical Limited :

(a) New Sales = Old Sales 500

+ 30% 150

650

(b) Conversion Factor = $\frac{\text{New Sales}}{\text{Old Sales}} = \frac{650}{500} = 1.3$

(c) Fuarease in EFR = Old total assefs × CF – Old assets

= 400 × 1.30 – 400

= 520 – 400

= 120

(d) Estimated refained eavnings :

Sales 650 × 6% = 39.00

Less : Ta × @ 60% $\frac{23.40}{15.60}$

less : Dividend pay out ratio 50% $\frac{7.80}{7.80}$

(e) EFR :

Particular	**OLD**	**CF**	**NEW**	**Increase**
Assets FA	200	1.3	260	260
Inventories	100	1.3	130	30
Receivables	75	1.3	97.50	22.50
Cash	25	1.3	3.50	7.50
	400	**1.3**	**520**	**120**
Liqbihpes				
Term loan	40	1.3	52	12
Short terms Bank	400	1.3	130	30
Payables	70	1.3	91	21
Provisions	25	1.3	32.50	7.50
	235	**1.3**	**305.50**	**70.50**
	165		**214.50**	**49.50**
Less : Refrained earnings	90		97.80	*7.80
Equity share capital	75	-	116.70	41.70
	165		**214.50**	**49.50**

(2) Pragati Limited :

(a) Conversion Factor = $\frac{\text{New Sales}}{\text{Old Sales}} = \frac{500}{400} = 1.25$

(b) Fuarease in EFR = Old total assets × CF – Old assets

= 200 × 1.25 – 200

= 250 – 200

= 50

(c) Estimated refained eavnings :

Sales 500 × NP ratio 5% = 25

Less : Tax @ 50% $\frac{12.50}{12.50}$

lers : Dividend pay out ratio 60% $\frac{7.50}{5.00}$

(e) EFR :

Particular	OLD	CF	NEW	Increase
Assets				
Net Fixed assets	100	1.25	125	25
Inventories	50	1.25	62.50	12.50
Accounts Receivables	35	1.25	43.75	8.75
Cash	15	1.25	18.75	3.75
	200	**1.25**	**250.00**	**50.00**
Liqbihpes				
Term loans	60	1.25	75	15
Bank borrowings	30	1.25	37.50	7.50
Accounts Payables	40	1.25	50.00	10
Provisions	10	1.25	12.50	2.50
	140	**1.25**	**175.00**	**35.00**
	60		**75**	**15**
Less : Refrained earnings	35		40	*5
Equity share capital	25	-	35	10
	60		**75**	**15**

Projected Income Statements

Particulars	**R (In Lakhs)**
Sales	500
Less : Cost of gords sold + Expenses @ (95%)	475
Net Profit @ 5%	25
Less : Tax @ 50%	12.50
	12.50
Less : Divided Pment @ 60%	7.50
	5.00

Projected Balance Sheet :

Loabilities	R	Assets	R
Equity Share Capital	35	Net fixed Assets	125
Retained earnings	40	Inventories	62.50
		Accounts receivables	43.75
Term Loan	75	Cash	18.75
Bank borrowings	37.50		
Accounts Payable	50		
Provisions	12.50		
	250		**250**

Check your progress 3

1. _____leading to financial planning.

   a. External Funds Requirement [EFR]

   b. Financial forecasting

2. The _____assumes that if the sales have to go up then the investments in all assets should proportionately go up.

   a. FER Model

   b. EFR Model

3. The Model also assumes that if the sales go up, _____liabilities will also go up proportionately.

   a. premeditated

   b. spontaneous

4. A _____is available for calculating EFR but it is advisable to understand the fundamentals behind it.

   a. formula

   b. Mathode

3.5 Let Us Sum Up

In this unit we studied about the derivatives in very detail.After going through this detiled unit the readers will get sufficient insight of derivates.

Here we studied the different type of derivatives is like future contracts, Forward contracts option and Swaps are explained in this topic these types of contract and markets are helpful for the investors as well as regular traders in the market. The derivatives are most modern financial instruments in hedging risk are those assets whose value is derived from the value of some underlying assets. The underlying asset may be equity, commodity or currency.We even studied the various types of derivatives products such as Future contracts, Forward Contacts, Options, and Swaps are traded in the Indian market. A detailed discussion was also made on EFR Model under which we studied that this EFR Model assumes that if the sales have to go up then the investments in all assets should proportionately go up. This is generally true for the Current Assets but not right for Fixed Assets and therefore the Model is faulty to some extent. In option product, there are two types of options- call option and put option.The Model also assumes that if the sales go up, spontaneous liabilities will also go up proportionately. This is also logical. A formula is available for calculating EFR but it is advisable to understand the fundamentals behind it. We can calculate EFR by preparing a projected B/S for the sales, from the past turnover.

So this unit is going to be of great help for the readers in understanding the concepts relating to derivates.

3.6 Answers for Check Your Progress

Check your progress 1

Answers: (1-b), (2-a), (3-b), (4-b), (5-a)

Check your progress 2

Answers: (1-b), (2-a), (3-a), (4-b)

Check your progress 3

Answers: (1-a), (2-b), (3-b), (4-a)

3.7 Glossary

1. **Accruals -** Continually recurring short-term liabilities especially accrued wages and accrued taxes.

3.8 Assignment

Explain the concept of derivatives with its different types.

3.9 Activities

How the Future Market Transaction is beneficial to the investors/ traders' Explain with an Example

3.10 Case Study

How the Future Market Transactions/Future contracts are beneficial for the traders' How they are contributing in the development of Indian capital market'

3.11 Further Readings

1. Financial Management ….Ravi Kishore.
2. Financial Management …..I. M. Pandey.
2. Financial Management …..P. C. Tulsian & Bharat Tulsian

Unit 4

DIVIDEND & DIVIDEND POLICIES

: UNIT STRUCTURE :

4.0 Learning Objectives

After learning this unit, you will be able to understand:-

- Meaning of Dividend.
- Types and Forms of Dividend.
- Legal Provisions for Dividend.
- Procedure for payment of final dividend.
- Factors affecting dividing policy.
- Different dividend policies.

4.1 Introduction

There are three important decisions of traditional financial management. These decisions are finance decision, investment decision and dividend decision. Finance decision is about creation of Funds. Which sources of funds are desirable for the firm are evaluated by the financial manager and most appropriate funds are selected by the manager. It is about formation of capital structure. Important decision is investment decision. It is known as capita! budgeting. Capital budgeting is long term investment decision. In investment decision working capital decision is included by some authors. Both decisions - finance decision and investment decisions are covered under other units of other blocks. Third important

decision is about dividend distribution. The basic objective of any business enterprise is to maximize the wealth of business consequently investors can be benefited by this wealth maximization here are two approaches about distribution of dividend. According to one approach distribution of dividend brings increase in value of shares while second approach favours retention of earnings. The distribution of divided always affects liquidity position of the enterprise, if adequate liquidity maintained by the enterprise, then it is desirable to pay dividend. There is one class of investors seeks regular payment of dividend and another class believe in capital appreciation. So for financial manager and management of the company it is crucial decision to pay dividend or not to pay dividend. The role of financial manager and management of the company is to take balanced decision to justify to pay and to not pay dividend.

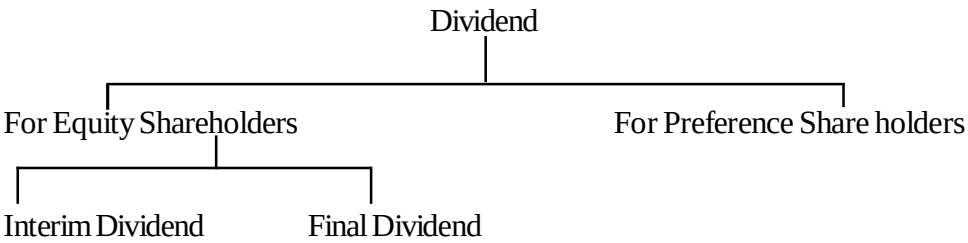
4.2 Definition of Dividend

(i) An amount paid generally on regular basis by the comp share holders annually out of its profit or reserves.

(ii) A dividend paid by the company to its share holders is return to shareholders for their investment in the company.

(iii) The term 'Dividend' has been defined under Section 2(35) of the companies Act, 2013. The term 'dividend' includes any dividend. In general term dividend means the profit of company which is not retained in the business and is distributed among equity shareholders in the proportion to the amount paid shares held by them.

4.3 Types of Dividend



(i) Interim Dividend:

This dividend is declared before the declaration of final dividend There are several factors which are considered before declaration of interim dividend - these factors are present profit status, profit status of future, liquidity of the company, market trend, orders on hand etc. This is one kind of additional dividend which is paid over and above final dividend. Interim dividend is a dividend which is declared between two annual general meetings.

(ii) Final Dividend:

It is that dividend which is paid on yearly base. At the end of accounting period, the accounts of company are prepared. After preparation of accounts board of directors evaluate liquidity, profitability position of the company, expectations of investors etc. With the consideration of important factors BoD recommends dividend to shareholders to approve it in annual general meeting, Once it is approved in AGM it becomes liability to the company and to be paid by the company in stipulated period of time.

(iii) Preference Share Dividend:

This is separate group of shareholders. They are having preference of two things over equity shareholders and that is dividend payment and redemption of capital. Rate of dividend for this group of shareholders remain fixed.

4.4 Form of Dividend

Dividend is that part of profit which is distributed by the company to the shareholders. Generally, corporate pay dividend in the form of cash. Dividend payment has direct relation with liquidity status of the company. If sufficient liquidity exists no firms will have any problem to pay dividend. In spite of having sufficient liquidity, company does not pay dividend i.e. funds are retained for expansion purpose. Sometime, company might have problem of liquidity. In brief when company does not want to pay dividend in cash to the shareholders. Is there any other form to give return to shareholders? Sometimes, firms may declare dividend in the form scrip, bond, stock, and property dividends. The following are the different forms of dividends.

(i) Cash Dividend:- This is most popular and desirable form of dividend payment This form of dividend is linked with good liquidity position. If company does not maintain enough cash (liquidity) it will create hurdle for dividend payment. During preparation of cash budget, the factor of dividend also should be considered so that with appropriate liquidity level dividend can be paid without any hurdle.

(ii) Scrip Dividend: - The form of dividend is used when firm has weak liquidity or shortage of cash. In this form of dividends, the equity share holders are issued transferable promissory notes. Here dividend payment is made in the form of promissory note. It may or may not be interest bearing.

(iii) Bond Dividend: - Bond dividend and scrip dividend are similar in all aspect except maturity period. The duration of bond dividend is longer compared scrip dividend. Bond dividend bears interest. Again this form is used when firm has lower or weak liquidity position.

(iv) Property dividend: - This form of dividend is not so popular. This form of dividend assists to maintain liquidity position of the firm because no cash dividend is paid in this form. Different assets which are not required by the company is given to the shareholders in the form of dividend. This form of dividend. This form of dividend payment is not popular in India.

(v) Stock Dividend (Bonus Share):- Under this form of dividend additional shares of common stocks to the ordinary shareholders. It is poplar in USA and known as stock dividend to existing shareholders. Due to this dividend payment, bonus shares are issued to the existing shareholders and consequently reserves of the firm are converted into equity. The declaration of bonus share will increase the paid up share capital and reduce retention of earnings. Due to issue of bonus shares, there will not be any change in net worth of the firm.

4.5 Dividend and Provisions under Companies Act, 2013

(i) Dividend payment on paid up value:- Under Section 51 stated that companies pay dividends in the proportion the amount paid up on each share when paid

value of all equity shares is different. While, in case of preference share, dividend is always paid at a fixed rate.

(ii) Final Dividend:- It is recommended by the Board of Directors in their meeting and after approval in annual general meeting of equity shareholders becomes payable.

(iii) Interim Dividend:- An interim dividend is declared by the Board of Directors at any time before the completion of respective financial year.

(iv) Source of Dividend Payment:- No dividend shall be declared or paid by the company for any financial year except out of profits of the company after deduction of depreciation. Dividend can be paid from profits of the company of previous financial years but by fulfilling other provisions.

(v) Transfer to Reserve:- It is mandatory to keep certain percentage of profit as a reserve before the deduction of any dividend in any financial year.

(vi) Separate Bank Account:- Any amount of dividend whether final or interim shall be deposited in a separate bank account within 5 days from the date of declaration of such dividend.

(vii) Time:- Dividend has to be paid within 30 days from the date of declaration.

(viii) Unpaid Dividend:- If dividend has not been paid or claimed within the 30 days from the date of its declaration, the company is required to transfer the total amount of dividend which not paid or unclaimed to a special account to be opened by the company in a scheduled bank to be called Unpaid Dividend Account. This amount shall be transfer within 7 days from the date of the said period of 30 days.

(ix) Power of SEBI:- In case of listed companies section 24 of the Companies Act, 2013, confers on SEBI, the power of administration of the provisions pertaining to non - payment of dividend. In any other case, the powers remain with Central Government.

(x) Investor Education and Protection Fund:- Any balance amount of unpaid dividend account of a company which is remain unpaid or unclaimed for an period of seven years from the date of such transfer shall be transferred by the company to the investor Education and Protection Fund.

(xi) Directors Responsibility:- When declared dividend is not paid by the company within 30 days from the date of declaration director shall, if he is knowingly a party to the default, be punishable with imprisonment for a term which may extend to 2 years and shall also be liable to a fine of H 1,000 every which default continues.

(xii) Delay in transfer of unpaid / unclaimed dividend:- If the company delays the transfer of the unpaid / unclaimed dividend amount to the unpaid dividend account, company will have interest @12% P.A. till it transfers the same.

(xiii) Mode of dividend payment:- Dividend payable in cash may be paid by cheque or warrant through post directed to the registered address of the shareholder who is entitled to the payment of the dividend or to his order or in any electronic mode sent to his banker.

4.6 Procedure for declaration and payment of final dividend

The following steps are to be followed for declaration and payment of final dividend.

(i) Meeting of Board of Directors:- Meeting of Board of Directors to be arranged in accordance with Section 173 of Companies Act. In this regard notice must be issued which states time, date and venue of the meeting and details of the business to be undertaken. This notice to be sent to all directors for time being in India.

(ii) For listed companies:- In case of companies which are listed on stock exchanges, companies have to notify stock exchanges, at least two working days in advance of the date of the meeting of its Board of Directors at which the recommendation of Final dividend is to be considered.

(iii) Resolutions:- Necessary resolutions are to be passed pertaining to approval of final and recommending the quantum of final dividend to be declared at the next annual general meeting.

(iv) Annual General Meeting:- For approval of dividend recommended by the board of directors, fixing time, date and venue for holding in the next annual general meeting of equity shareholders of the company.

(v) Authorization to Company Secretary:- Approving notice for the annual general meeting and authorizing the company secretary to issue the notice of the AGM on the behalf of the Board of Directors of the company.

(vi) Closure of Register:- As for Section 91 of Companies Act, 2013 date of closure of register of members and the share transfer register is determine by the company the dates so fixed should not in conflict with the clearance programme in the stock exchanges.

(vii) Reserve Creation:- It should be ensured that the mandatory percentage of profits is transferred to company's reserve.

(viii) Listed Company & book closure: - A public notice is to be circulated by listing company for book closure in a news paper of district in which the registered office of the company is located, at least 7 days before the date of commencement of book closure.

(ix) Holding of AGM :- Annual General Meeting to be arranged and pass an ordinary resolution declaring the payment of dividend to the shareholders of the company as per recommendation of BOD. The shareholders cannot declare the final dividend at a rate higher than the one recommended by Board but they can recommend for lower rate.

(x) Dividend Statement :- A statement pertaining to payment of dividend to each shareholder is prepared by the company.

(xi) Dividend Distribution Tax: - Dividend distribution tax should be said to the tax authorities within the prescribed time.

(xii) Separate Bank Account :- For payment of dividend separate bank Account should be operated by the bank and total amount of dividend should be credited within 5 days from the dividend declaration date.

(xiii) Mode of Dividend Payment :- In case of listed company payment of dividend, it is mandatory to use either directly or through its registrars to an issue and share transfer agents (RTI and STA), any Reserve Bank of India approved electronic mode of payment such as Electronic Clearing Service (ECS) National Electronic Fund Transfer (NEFT).

(xiv) Dispatch of Warrants: - All dividend warrants should be dispatched within 30 days of the declaration of dividend. In case shareholders, dispatch the dividend warrant to the first named shareholders.

(xv) Unpaid Dividend Account:- It is mandatory for the company to open account named "unpaid dividend account within 7 days after expiry of the period of 30 days of declaration of final dividend for unpaid / unclaimed dividend.

(xvi) Investor Education and Protection Fund (IEPF) : Again it is mandatory to transfer any balance of unpaid / unclaimed dividend amount in unpaid / unclaimed dividend account to investor education and protection fund after the expiry of seven years form the date of transfer to unpaid / unclaimed dividend account.

Check your Progress -1

1) Dividend is distribution of _____.

   (a) Loss (b) Profit

2) Interim Dividend is paid on _____.

   (a) Equity Share Capital (b) Preference Share Capital

3) Dividend which is declared between two annual general meeting is _____.

   (a) Final Dividend (b) Interim Dividend

4) Dividend rate is fixed on _____.

   (a) Preference Share Capital (b) Equity Share Capital

5) Stock Dividend is known as _____.

   (a) Bonus Share (b) Bond Dividend

6) Dividend is given in the form of asset is _____.

   (a) Scrip Dividend (b) Property Dividend

7) Separate Bank account is to be open within _____days from the date of declaration.

   (a) 7 days (b) 5 days

8) Dividend is to be paid within _____ days after declaration of it

   (a) 30 days (b) 7 days

9) Unpaid dividend account is to be transferred to investor education and protection fund in _____.

   (a) 7 Years (b) 7 days

4.7 Determinants of Dividend policy

The determination of dividend policy cannot be done in isolation. It is dependent decision. There are several internal and external factors which are to be considered before finalization of dividend policy. These factors are as follows.

(i) Economic Condition: - When economic condition is growing the firm may pay high dividend but when state of economy is uncertain, both political and economical, the firm may maintain a low dividend payout policy. It is a external factor.

(ii) Expansion Project: - Any firms when having any expansion project require additional funds. Retained earnings are internal source of finance. If retained earnings is used as a source of finance dividend payout ratio will reduce. It is internal factor.

(iii)Degree of Control:- If management does not want to spread control by issuing share, in this case firm can use retained earnings as a source of finance. Consequently payment of dividend would decline.

(iv) Cost of Capital :- The cost of external source like equity, preference and debenture is explicit cost while internal source retained is implicit cost. When external sources are costlier, firm would go for internal source so dividend payment will be reduced.

(v) Earning Status :- The flexibility in earnings is one of the constraints which do not allow predicting its future earnings. On the other stable earnings help to predict future earnings. A stable firm is therefore more likely to pay higher dividend. So earning status is also one of the factors for payment of dividend.

(vi) Liquidity :- Without or with poor liquidity the payment of dividend is not possible and desirable. In order to pay dividend, a company requires cash and therefore the availability of cash resource of the important issues of dividend payment.

(vii) Divisible Profit :- The determination of divisible profit requirement. Only divisible profit can be distributed as dividend, Otherwise it is treated as payment of dividend out of capital.

(viii) Legal Provision :- It is mandatory for any company to transfer specific percentage of profit to General Reserve. This transfer also reduces the quantum of payment of dividend.

(ix) Contractual Constraints:- If company has used debenture and / or preference capital which leads to fixed payment of interest and Dividend and if company passes through recession period, company will have lower amount of profit and lower dividend will be payable to equity shareholders.

(x) Additional Capital good: - A firm intends to raise further funds from the capital market for its expansion and diversification projects to attract the funds from the capital market; it has to maintain a liberal dividend payment.

(xi) Rate of expansion: - If one time expansion project is required to execute funds raising needs will be different if the more rapid the rate at which the firm is growing, the great will be its needs for financing asset expansions. The greater the future need for funds, and company wants to use internal source, dividend payment will be reduced.

4.8 Dividend Policies

There are different types of dividend policies adopted by companies. The application of dividend policy is based on management's philosophy, regularity in

liquidity and profitability. Another aspect is whether company is having developed or developing stage and many more. The important dividend policies generally followed by companies are as follows:

(1) No dividend in initial period dividend policy.

(2) Regular or Fixed dividend policy.

(3) Regular dividend plus extra dividend policy.

(4) Irregular dividend policy.

(5) Regular stock dividend policy for certain period.

(6) Regular plus stock dividend.

(7) Liberal dividend policy.

(1) No dividend in initial period dividend policy:

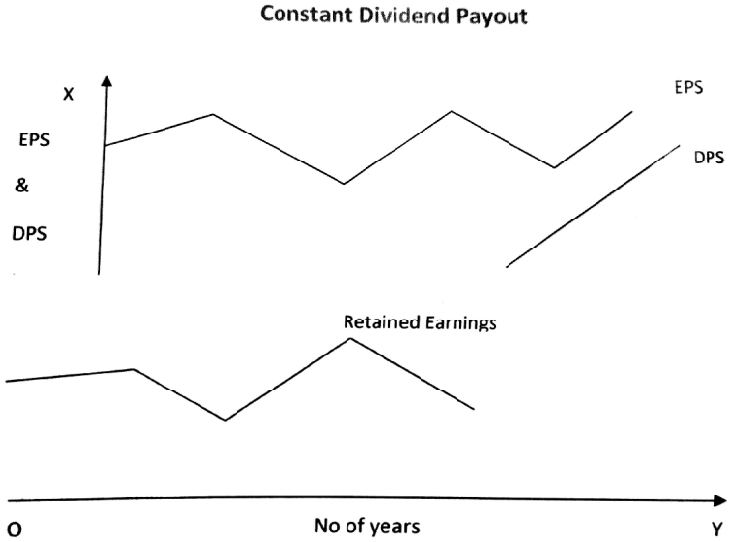
This kind of dividend policy is generally adopted by developing companies. In spite of having sufficient lent profit, profit is not distributed in the form of dividend but reinvested in the business. Reinvestment is cheapest sources of finance so instead of having external finance companies goes for this source of finance. This policy is not preferable for long period of time. It is same minimum rate of dividend is expected by the shareholders.

(2) Regular or fixed dividend policy:-

It is believed that payment of dividend always enhances the credit dividend is also desirable. This policy further can be classified into two categories (a) constant dividend payout policy (b) constant dividend rate policy.

(a) Constant dividend payout policy:-

Under this method regular or constant rate of dividend is applied on earnings per share. Fixed percentage of earnings per share is paid to equity shareholders as a dividend. So if earning varies, the amount of dividend also varies from year to year. This method is quite volatile, fluctuating with changes in the economy and firms own special circumstances. This method is generally not used by majority of firm. The difference between earnings per share and dividend per share is retained earnings. This policy can be shown as follows



(b) Constant Dividend Rate Policy:-

Under this policy of dividend, dividend payment is made on constant rate even when earnings vary from year to year. This may be possible only when the earnings trend of the business entity does not show wide fluctuations. This policy is generally applied when dividend equalization reserve is maintained by the company. Firms are generally careful to set the dividend as a sustainable level and raise it only when the firm can sustain the higher level. Occasionally firm may cut dividends in reserve situation. This Policy can be shown as follows:

(3) Regular dividend plus extra dividend policy:-

Well established and reputed companies have trend to pay regular and / or constant dividend to maintain their image in the market It is also possible that when companies earn abnormal profit, directors pay extra dividend in addition to regularly, yearly dividend. This payment of extra dividend is not regular is nature.

(4) Irregular dividend policy:-

This policy is desirable for those companies where their income is not regular. Under this policy neither rate nor amount of dividend is certain. It is purely based on earnings of the company. Generally every company makes effort to pay dividend but when income or earnings of the company are not certain in this case company pays irregular dividend.

(5) Regular stock dividend policy for certain period:-

When company has liquidity problem or company wants to expand its own business in this case company does not pay dividend to the shareholders but gives stock dividend for certain period of time. Under this policy size of equity capital keeps on increasing and consequently in future dividend per share gets reduce. This policy is not favored by the expert field.

(6) Regular plus stock dividend: -

Under this policy company try to maintain regular dividend payment to own shareholders. This policy is desirable for the following circumstances (i) company wants to pay regular dividend (ii) company wants to use retained earnings (iii) company having profit does not want to distribute dividend in cash form.

In brief under this policy companies want to achieve two goals i.e. payment of dividend and maintaining cash in the business.

(7) Liberal dividend policy: -

This is purely based on approach of the management. When management distribute maximum amount of earnings in the form of dividend and retains insig-

nificant amount of earnings as a retained earnings is known as liberal dividend policy. When company earns higher profit pays higher dividend and when earns lower profit pays lower dividend under this policy. Liberal dividend policy is one kind of irregular dividend policy.

Check Your Progress - 2

1) For determination of dividend policy economic policy is _____.

   (a) Internal Factor (b) External Factor

2) Whether expanse object is internal or external factor for determination of dividend policy.

   (a) Internal Factor (b) External Factor

3) Which kind of liquidity status of the company is desirable to pay dividend?

   (a) Good Liquidity (b) Poor Liquidity

4) Retained earnings has_____cost.

   (a) Implicit (b) Explicit

5) Cost of retained earnings is_____ than cost of equity

   (a) Less (b) More

6) Under liberal dividend policy_____amount of profit is distributed as dividend.

   (a) Maximum (b) Minimum

7) Under which policy cash dividend is not paid?

   (a) Regular dividend policy.

   (b) Stock dividend policy for certain period.

4.9 Let us sum up

In this unit we have studied meaning of dividend and dividend policies and related aspects thereon.

Dividend is return to shareholder for their investment. This return is paid by the company from its profit. Dividend payment can be done in different form but most popular and desirable form is cash dividend. Dividend is paid on equity share capital and preference share capital. Dividend is preference share capital while on equity share capital it is not fixed. Dividend payment has certain legal restrictions in this regard several provision companies Act, 2013. Dividend decision cannot be taken management in isolation. Internal and external factors have influence on dividend payment. Therefore before making any dividend payment due consideration is given to them. Within the legal frame work all companies have liberty to decide their dividend policy so for understanding of it different dividend policies are also discussed and explained.

4.10 Answers for check your progress

Your Progress -1

Answer :- (1-b), (2-a), (3-b), (4-a), (5-a), (6-b), (7-a) (8-a), (9-a)

Your Progress - 2

Answer :- (1-b,) (2-a), (3-a), (5-a), (6-a),(7-b)

4.11 Glossary

1. Dividend: The term "Dividend" has been defined under Section 2(35) of Companies Act, 2013. The term "Dividend' includes any interim dividend.

2. Unpaid Dividend: It is that part of dividend which is not paid/ claimed by shareholders within the 30 days from the date of its declaration.

3. Investor Education and Protection fund: It is that balance of unpaid divided account, if it remains unpaid for a period of 7 years from the date of transfer of dividend to unpaid account will be transferred to Investor Education and Protection Fund.

4. Annual General Meeting: As per Section 96 of the Companies Act, 2013, every company, other than one person company (OPC) must hold a general meeting in each year apart from other meetings as Annual general Meeting.

4.12 Assignment

Describe different dividend policies adopted by companies.

4.13 Activities

Discuss about different form of dividend.

4.14 Case Study

Analyze dividend policy of any one company through annual report of last five years of that respective company.

4.15 Further Readings

1. Financial Management - Ravi M. Kishore
2. Financial Management- I.M. Pandey

Block Summary

In this block we had a detailed discussion on few of the very important topics such as investment and financing decisions and few other very important topics.

Here in this block under unit 1 a detiled discussion was made on about Investment and Financing Decisions, detailed analysis was made on Components of cash flows, discussion was also made on the complex Investment Decisions. Further in unit 2 a detiled discussion was made on Advantages of financial planning, Need for Financial Planning, Steps in financial planning, Types of Financial planning, Scope of Financial planning. In unit 3 Derivatives, Future Contract, Forward Contacts, Options, Swaps, Difference between Forward Contract and future contract, Financial Planning and Preparation of Financial Plan after EFR Policy is Determined. In unit 4 different aspects of dividend and dividend policies are discussed to for better understanding in this regard.

After going through this unit students must have got sufficient information on these vital topics.

Block Assignment

Short Answer Questions

1. Components of Net Working Capital.
2. Free Cash Flows.
3. Terminal Cash Flows.
4. Scope of financial planning.
5. Definition of financial planning
6. Need for financial planning.
7. Explain in detail the concept of future contracts and the different types of participants in this Market'
8. Give in detail the importance of financial Planning.

Long Answer Questions

1. Discuss Investment decisions using capital rationing
2. What are the steps involved in Financial Planning'
3. Explain forward contracts and options

Enrolment No.:

1. How many hours did you need for studying the units?

Unit No.	**1**	**2**	**3**	**4**
Nos of Hrs				

2. Please give your reactions to the following items based on your reading of the block:

Items	Excellent	Very Good	Good	Poor	Give specific example if any
Presentation Quality	☐	☐	☐	☐	_____
Language and Style	☐	☐	☐	☐	_____
Illustration used (Diagram, tables etc)	☐	☐	☐	☐	_____
Conceptual Clarity	☐	☐	☐	☐	_____
Check your progress Quest	☐	☐	☐	☐	_____
Feed back to CYP Question	☐	☐	☐	☐	_____

3. Any Other Comments

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