Significance

Finance is the life blood of business. Before discussing the nature and scope of financial management, the meaning of 'finance' has to be explained. In fact, the term, finance has to be understood clearly as it has different meaning and interpretation in various context. The time and extent of the availability of finance in any organization indicates the health of a concern. Every organization, may it be a company, firm, college, school, bank or university requires finance for running day to day affairs. As every organization previews stiff competition, it requires finance not only for survival but also for strengthening themselves. Finance is said to be the circulatory system of the economy body, making possible the required cooperation between the innumerable units of activity.

Definition of Finance

According to F.W.Paish, Finance may be defined as the position of money at the time it is wanted.

In the words of John J. Hampton, the term finance can be defined as the management of the flows of money through an organization, whether it will be a corporation, school, bank or government agency.

According to Howard and Upton, "finance may be defined as that administrative area or set of administrative functions in an organization which relates with the arrangement of each and credit so that the organization may have the means to carry out the objectives as satisfactorily as possible.

raising the money on the best terms available, and devoting the available funds to the best uses. Kenneth Midgley and Ronald Burns state: "Financing is the process of organising the flow of funds so that a business can carry out its objectives in the most efficient manner and meet its obligations as they fall due."

Finance squeezes the most out of every available rupee. To get the best out of the available funds is the major task of finance, and the finance manager performs this task most effectively if he is to be successful. In the words of Mr.A.L.Kingshott, "Finance is the common denominator for a vast range of corporate objectives, and the major part of any corporate plan must be expressed in financial terms."

The description of finance may be applied to money management provided that the following three objectives are properly noted :

Many activities associated with finance such as saving, payment of things, giving or getting credit, do not necessarily require the use of money.

In the first place, the conduct of international trade has been facilitated. The development of the pecuniary unit in the various commercial nations has given rise to an international denominator of values. The pecuniary unit makes possible a fairly accurate directing of capital to those parts of the world where it will be most productive. Within any given country, the flow of capital from one region to another is guided in a similar manner.

The term ‘finance’ refers to the financial system in a rudimentary or traditional economy, that is, an economy in which the per capita output is low and declining over a period of time. The financial organisation in rudimentary finance is characterized by the absence of any financial instruments of the saving deficit units of their own which they can issue and attract savings. There will not be any inducement for higher savings by offering different kinds of financial assets to suit the varied interests and preferences of the investing

business activity, it is considered almost inter-changeable with business finance.

Business finance, apart from the financial environment and strategies of financial planning, covers detailed problems of company promotion, growth and pattern. These problems of the corporate sector go a long way in widening the horizon of business finance.

The finance manager has to assume the new responsibility of managing the total funds committed to total assets and allocating funds to individual assets in consonance with the overall objectives of the business enterprise.

Direct Finance

The term 'direct', as applied to the financial organisation, signifies that savings are effected directly from the saving-surplus units without the intervention of financial institutions such as investment companies, insurance companies, unit trusts, and so on.

Indirect Finance

The term 'indirect finance' refers to the flow of savings from the savers to the entrepreneurs through intermediary financial institutions such as investment companies, unit trusts and insurance companies, and so on.

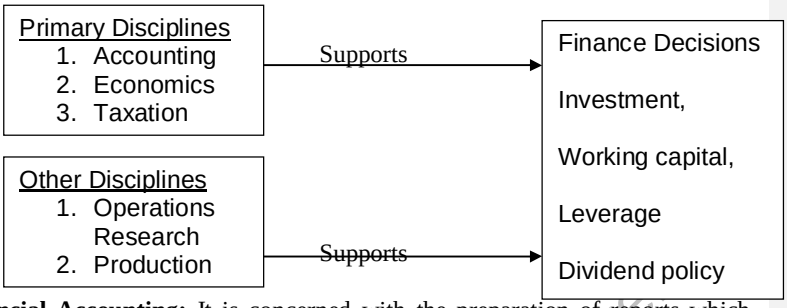
Finance administers economic activities. The scope of finance is vast and determined by the financial needs of the business enterprise, which have to be identified before any corporate plan is formulated. This eventually means that financial data must be obtained and scrutinised. The main purpose behind such scrutiny is to determine how to maintain financial stability.

Public Finance

It is the study of principles and practices pertaining to acquisition of funds for meeting the requirements of government bodies and administration of these funds by the government.

and economical data. In fact, accounting information relates to the production, sales, expenses, investments, losses and gains of the business. Accounting has three branches namely, financial accounting, cost accounting and management accounting.

Relationships between Finance and other Disciplines



Financial Accounting: It is concerned with the preparation of reports which provide information to users outside the firm. The most common reports are the financial statements included in the annual reports of stock-holders and potential investors. The main objective of these-reports is to inform stockholders, creditors and other investors how assets are controlled by a firm. In the light of the financial statements and certain other information, the accountant prepares funds film statement, cash flow statement and budgets.

A master plan (Budget) of the organization includes and coordinates the plans of every department in financial terms. According to Guthmann and Dougall, "Problems of finance are intimately connected while problems of purchasing, production and marketing".

Cost Accounting: It deals primarily with cost data. It is the process of classifying, recording, allocating and reporting the various costs incurred in the operation of an enterprise. It includes a detailed system of control for material, labour and overheads. Budgetary control and standard casting are integral part of

The term 'business finance' is very comprehensive. It implies finances of business activities. The term, 'business' can be categorized into three groups: commerce, industry and service. It is a process of raising, providing and managing of all the money to be used in connection with business activities. The term 'corporation finance' includes, apart from the financial environment, the different strategies of financial planning. It includes problems of public deposits, inter-company loans and investments, organised markets such as the stock exchange, the capital market, the money market and the bill market.

The finance function cannot work effectively unless it draws on the-disciplines which are closely associated with it. Management is heavily dependent on Accounting, Economics, Taxation, Operations research, Production and Marketing.

REVIEW QUESTIONS

1. Explain fully the concept of finance.
2. Bring out the importance of finance.
3. It is often said that financial activities hinge on the money management. Do you agree with this point of view?
4. "Financial accounting is essentially of a stewardship nature." Comment.
5. What is business finance? Explain its significance.
6. How can you classify finance?
7. How is finance related to other disciplines?

*****

Nature of Finance Function

The finance function is the process of acquiring and utilizing funds of a business. Finance functions are related to overall management of an organization. Finance function is concerned with the policy decisions such as like of business, size of firm, type of equipment used, use of debt, liquidity position. These policy decisions determine the size of the profitability and riskiness of the business of the firm. Prof. K.M.Upadhyay has outlined the nature of finance function as follows:

i) In most of the organizations, financial operations are centralized. This results in economies.

ii) Finance functions are performed in all business firms, irrespective of their sizes / legal forms of organization.

iii) They contribute to the survival and growth of the firm.

iv) Finance function is primarily involved with the data analysis for use in decision making.

v) Finance functions are concerned with the basic business activities of a firm, in addition to external environmental factors which affect basic business activities, namely, production and marketing.

vi) Finance functions comprise control functions also

vii) The central focus of finance function is valuation of the firm.

Content of Finance Functions

The areas of responsibility covered by finance functions may be regarded as the content of finance function. These areas are specific functions of finance. Famous authors of financial management have enumerated the contents of finance function, as outlined, below:

Finance Function – Objectives

The objective of finance function is to arrange as much funds for the business as are required from time to time. This function has the following objectives.

1. **Assessing the Financial requirements.** The main objective of finance function is to assess the financial needs of an organization and then finding out suitable sources for raising them. The sources should be commensurate with the needs of the business. If funds are needed for longer periods then long-term sources like share capital, debentures, term loans may be explored.

2. Proper Utilisation of Funds : Though raising of funds is important but their effective utilisation is more important. The funds should be used in such a way that maximum benefit is derived from them. The returns from their use should be more than their cost. It should be ensured that funds do not remain idle at any point of time. The funds committed to various operations should be effectively utilised. Those projects should be preferred which are beneficial to the business.

3. Increasing Profitability. The planning and control of finance function aims at increasing profitability of the concern. It is true that money generates money. To increase profitability, sufficient funds will have to be invested. Finance function should be so planned that the concern neither suffers from inadequacy of funds nor wastes more funds than required. A proper control should also be exercised so that scarce resources are not frittered away on uneconomical operations. The cost of acquiring funds also influences profitability of the business.

c) Procuring the best mix of financing – i.e. the type and amount of corporate securities.

An analysis of the aforesaid approaches unfold that modern approach involving an integrated approach to finance has considered not only determination of total amount of funds but also allocation of resources efficiently to various assets of the firm. Thus one can easily decipher that the concept of finance has undergone a perceptible change.

This is evident from the views expressed by one of the financial experts, namely, James C Van Horne and the same are reproduced below:

Finance concept (function or scope) has changed from a primarily descriptive study to one that encompasses regions analysis and normative theory; from a field that was concerned primarily with the procurement of funds to one that includes the management of assets, the allocation of capital and the valuation of the firm as a whole; and from a field that emphasized external analysis to the firm to one that stresses decision making within the firm. Finance, today, is best characterized as ever changing with new ideas and techniques. The role of financial manager is considerably different from what it was a few years ago and from what it will no doubt be in another coming years. Academicians and financial mangers must grow to accept the changing environment and master its challenge.

Scope of Finance Function

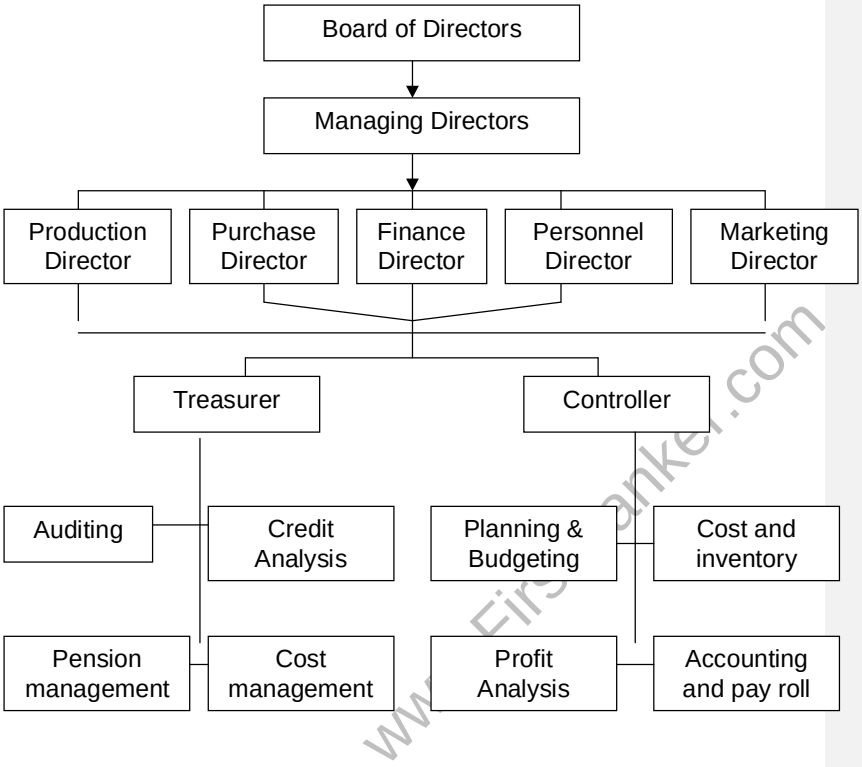
The scope of finance function is very wide. While accounting is concerned with the routine type of work, finance function is concerned with financial planning, policy formulation and control. Earnest W. Walker and William are of the opinion that the financial function has always been important in business management. The financial organiastion depends upon the nature of the

debts. Even here if gestation period is longer, then share capital may be most suitable. Long-term funds should be employed to finance working capital also, if not wholly then partially. Entirely depending upon overdrafts and cash creditors for meeting working capital needs may not be suitable. A decision about various sources for funds should be linked to the cost of raising funds. If cost of raising funds is very high then such sources may not be useful for long.

iii) **Selection of Source of Finance.** After preparing a capital structure, an appropriate source of finance is selected. Various sources from which finance may be raised, include: share capital, debentures, financial institutions, commercial banks, public deposits, etc. If finances are needed for short periods then banks, public deposits and financial institutions may be appropriate; on the other hand, if long-term finances are required then share capital and debentures may be useful. If the concern does not want to tie down assets as securities then public deposits may be a suitable source. If management does not want to dilute ownership then debentures should be issued in preference to share.

iv) **Selection of Pattern of Investment.** When funds have been procured then a decision about investment pattern is to be taken. The selection of an investment pattern is related to the use of funds. A decision will have. to be taken as to which assets are to be purchased ? The funds will have to be spent first on fixed assets and then an appropriate portion will be retained for Working Capital. The decision-making techniques such as Capital Budgeting, Opportunity Cost Analysis, etc. may be applied in making decisions about capital expenditures. While spending on various assets, the principles of safety, profitability and liquidity should not he ignored. A balance should be struck even in these principles.

Organization of Finance Function



It is evident from the above that Board of Directors is the supreme body under whose supervision and control Managing Director, Production Director, Personnel Director, Financial Director, Marketing Director perform their respective duties and functions. Further while auditing credit management, retirement benefits and cost control banking, insurance, investment function under treasurer, planning and budgeting, inventory management, tax

finance functions of augmenting resources and utilisation of funds, no doubt, have a significant impact on other functions also. Infact, between finance on one side and production, marketing and other functions on the other side, an inseparable relationship exists. The Board of Directors have been bestowed with the onerous responsibility of reviewing financial procedures, formulation of financial policies, selection of right finance personnel with professional capabilities like Chartered Accountant, Cost Accountant and Company Secretaries. The Board of Directors with counsel and direction given by the financial manager finalise decisions pertaining to formulation of new projects, diversification of projects, expansion of undertaking, introduction of new products, widening the branch areas, diversification of new product lines. It should be remembered that the financial controller, in fact, does not control finance. For management control and planning, the financial controller develops, uses and interprets information.

Summary

The finance function is the process of acquiring and utilizing funds of a business. Finance functions are related to overall management of an organization. Finance function is concerned with the policy decisions such as like of business, size of firm, type of equipment used, use of debt, liquidity position. These policy decisions determine the size of the profitability and riskiness of the business of the firm. The areas of responsibility covered by finance functions may be regarded as the content of finance function. These areas are specific functions of finance. The main objective of finance function is to assess the financial needs of an organization and then finding out suitable sources for raising them.

Keywords

Finance Function : The finance function is the process of acquiring and utilizing funds of a business.

Content of finance function - The areas of responsibility covered by finance functions may be regarded as the content of finance function.

Controller – He is concerned with the management and control of firm's assets.

Treasurer – He is concerned with managing the firm's funds and safeguarding assets.

Review Questions

1) What is finance function?
2) State the objectives of finance function.
3) Explain the significance of finance function.
4) Analyse the various approaches to finance function.
5) Explain the role of CFO in financial management.
6) Discuss the support extended by the Board of Directors in managing finance.
7) Explain the scope of finance function.
8) Elucidate the changing facet of finance function.

*****

Financial Management – Significance

Financial management has undergone fundamental changes as regards its scope and coverage. Financial management is the application of planning and control to the finance function. It helps in profit planning, measuring costs, controlling inventories, accounts receivables. It also helps in monitoring the effective deployment of funds in fixed assets and in working capital. It aims at ensuring that adequate cash is on hand to meet the required current and capital expenditure. It facilitates ensuring that significant capital is procured at the minimum cost to maintain adequate cash on hand to meet any exigencies that may arise in the course of business. Financial management helps in ascertaining and managing not only current requirements but also future needs of an organization.

- It ensures that funds are available at the right time and procurement of funds does not interfere with the right of management / exercising control over the affairs of the company.
- It influences the profitability / return on investment of a firm.
- It influences cost of capital. Efficient fund managers endeavour to locate less cost source so as to enhance profitability of organization.
- It affects the liquidity position of firms.
- It enhances market value of the firm through efficient and effective financial management.
- Financial management is very much required for the survival, growth, expansion and diversification of business.
- It is required to ensure purposeful resource allocation.

protective covenants/information processing, issue management, etc. were the prime concerns. It was an outsider-looking-in function.

From the middle of 1950s financial management turned into an insider-looking-in function. That is, the emphasis shifted to utilisation of funds from raising of funds. So, choice of investment, capital investment appraisals, etc., assumed importance. Objective criteria for commitment of funds in individual assets were evolved.

Towards the close of the 1950s Modigliani and Miller even argued that sources of capital were irrelevant and only the investment decisions were relevant. Such was the total turn in the emphasis of financial management.

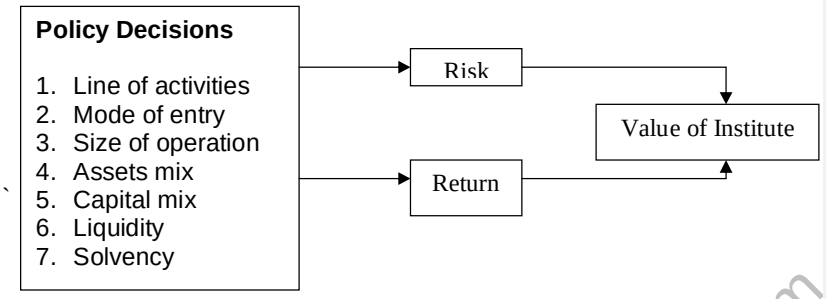
In the 1960s portfolio management of assets gained importance. In the selection of investment opportunities portfolio approach was adopted, certain combinations of assets give more overall return given the risk or give a certain return for a reduced risk. So, selection of such combination of investments gained eminence.

In the 1970s the capital asset pricing model (CAPM), arbitrage pricing model (APM), option pricing model (OPM), etc., were developed - all concerned with how to choose financial assets. In the 1980s further advances in financial management were found. Conjunction of personal taxation with corporate taxation, financial signalling, efficient market hypothesis, etc., was some newer dimensions of corporate financial decision paradigm. Further Merger and Acquisition (M&A) became an important corporate strategy.

The 1960s, saw the era of financial globalization. Educational globalization is the order of the day. Capital moved West to East, North to South and so on. So, global financial management, global investment management, foreign exchange risk management, etc., become more important topics.

the above orientation in the exhibit given below:

Orientation of Financial Management



iii) Financial management essentially involves risk-return trade-off. Decisions on investment involve choosing of types of assets which generate returns accompanied by risks. Generally higher the risk returns might be higher and vice versa. So, the financial manager has to decide the level of risk the firm can assume and satisfy with the accompanying return. Similarly, cheaper sources of capital have other disadvantages. So to avail the benefit of the low cost funds, the firm has to put up with certain risks, so, risk-return trade-off is there throughout.

iv) Financial management affects the survival, growth and vitality of the institution. Finance is said to be the life blood of institutions. The amount, type, sources, conditions and cost of finance squarely influence the functioning of the institution.

v) Finance functions, i.e., investment, raising of capital, distribution of profit, are performed in all firms - business or non-business, big or small, proprietary or corporate undertakings. Yes, financial

Financial Management – Key Areas

The key areas of financial management are discussed in the following paragraphs.

(i) **Estimating the Capital requirements of the concern.** The Financial Manager should exercise maximum care in estimating the financial requirement of his firm. To do this most effectively, he will have to use long-range planning techniques. This is because, every business enterprise requires funds not only for long-term purposes for investment in fixed assets, but also for short term so as to have sufficient working capital. He can do his job properly if he can prepare budgets of various activities for estimating the financial requirements of his enterprise. Carelessness in this regard is sure to result in either deficiency or surplus of funds. If his concern is suffering because of insufficient capital, it cannot successfully meet its commitments in time, whereas if it has acquired excess capital, the task of managing such excess capital may not only prove very costly but also tempt the management to spend extravagantly.

(ii) **Determining the Capital Structure of the Enterprise**. The Capital Structure of an enterprise refers to the kind and proportion of different securities. The Financial Manager can decide the kind and proportion of various sources of capital only after the requirement of Capital Funds has been decided. The decisions regarding an ideal mix of equity and debt as well as short-term and long-term debt ratio will have to be taken in the light of the cost of raising finance from various sources, the period for which the funds are required and so on. Care should be taken to raise sufficient long-term capital in order to finance the fixed assets as well as the extension programme of the enterprise in such a

solvency will be in jeopardy, in case major portion of its funds are locked up in highly profitable but totally unsafe projects. .

(v) Distribution of Surplus judiciously. The Financial Manager should decide the extent of the surplus that is to be retained for ploughing back and the extent of the surplus to be distributed as dividend to shareholders. Since decisions pertaining to disposal of surplus constitute a very important area of Financial Management, he must carefully evaluate such influencing factors as—(a) the trend of earnings of the company; (A) the trend of the market price of its shares; (c) the extent of funds required for meeting the self-financing needs of the company; (d) the future prospects; (e) the cash flow position, etc.

(vi) Efficient Management of cash. Cash is absolutely necessary for maintaining enough liquidity. The Company requires cash to—(a) pay off creditors; (b) buy stock of materials; (c) make payments to labourers; and (d) meet routine expenses. It is the responsibility of the Financial Manager to make the necessary arrangements to ensure that all the departments of the Enterprise get the required amount of cash in time for promoting a smooth flow of all operations. Short-age of cash on any particular occasion is sure to damage the credit- worthiness of the enterprise. At the same time, it is not advisable to keep idle cash also. Idle cash should be invested in near-cash assets that are capable of being converted into cash quickly without any loss during emergencies. The exact requirements of cash during various periods can be assessed by the Financial Manager by preparing a cash-flow statement in advance.

business. This will ensure that liquidity position of the company is maintained intact with the minimum amount of external borrowings.

4) To *Facilitate Cost Control:* The Financial Manager is generally the first person to recognise when the costs for the supplies or production processes are exceeding the standard costs/budgeted figures. Consequently, he can make recommendations to the top management for controlling the costs.
5) *To Facilitate Pricing of Product, Product Lines and Services:* The Financial Manager can supply important information about cost changes and cost at varying levels of production and the profit margins needed to carry on the business successfully. In fact, financial manager provides tools of analysis of information in pricing decisions and contribute to the formulation of pricing policies jointly with the marketing manager.
6) *Forecasting Profits:* The Financial manager is usually responsible for collecting the relevant data to make forecasts of profit levels in future.
7) *Measuring Required Return:* The acceptance or rejection of an investment proposal depends on whether the expected return from the proposed investment is equal to or more than the required return. An investment project is accepted if the expected return is equal or more than the required return. Determination of required rate of return is the responsibility of the financial manager and is a part of the financing decision.
8) *Managing Assets:* The function of asset management focuses on the decision-making role of the financial manager. Finance personnel meet with other officers of the firm and participate in making decisions affecting the current and future utilization of the firm's resources. As an example, managers may discuss the total amount of assets needed by the

find wide application in financial management as tools for solving corporate financial problems like budgeting, choice of investments, acquisition or mergers etc. This takes the financial management nearer to treatment as a subject of science.

Most practical problems of finance have no hard and fast answers that can be worked out mathematically or programmed on a computer. They must be solved by judgment, intuition and the "feel" of experience. Thus, despite its frequent acceptance as an applied science, finance remains largely an art. Because, according to George A. Christy and Feyton Foster Roden (Finance: Environment and Decisions) knowledge of facts, principles and concepts is necessary for making decisions but personal involvement of the manager through his intuitive capacities and power of judgment becomes essential. As the application of human judgement and skills is also required for effective financial management, financial management is also an art.

In the entire study of financial management whether it is related to investment decisions, financing decisions i.e. deciding about the sources of financing, or dividend decisions, there is a mixture of science as well as art. When techniques for analytical purposes are used, ***it is science*** and when choice is application of the results ***it is an art.***

Summary

Financial management is the application of planning and control to the finance function. It helps in profit planning, measuring costs, controlling inventories, accounts receivables. It also helps in monitoring the effective deployment of funds in fixed assets and in working capital. It aims at ensuring that adequate cash is on hand to meet the required current and capital expenditure. It facilitates ensuring that significant capital is procured at the minimum cost to maintain adequate cash on hand to meet any exigencies that may arise in the course of

Keywords

Financial Management : Financial management is the application of planning and control to the finance function. It helps in profit planning, measuring costs, controlling inventories, accounts receivables.

Planning : Determining future course of action.

Art of Management : Application of science in the attainment of practical results.

Science of Management : A body of knowledge consisting of concepts, principles and techniques organized around managerial functions.

Review Questions

1) What is financial management?
2) Define financial management. Explain its significance.
3) Explain the various areas of financial management.
4) Analyse the nature of financial management.
5) Describe the evolution of financial management.
6) Financial management – is it a science or an art.
7) What are key areas of financial management.
8) Explain the role of financial manager in the current scenario.

*****

Objectives / Goals – Meaning

Objectives or goals are the end results towards which activities are aimed. Formulation and definition of objectives of an organization is the basic requirement of effective management. According to George R. Terry, "a managerial objective is the intended goal which prescribes definite safe and suggests direction to efforts of a manager". Further objectives can either he short term or long-term. As business activities involve allocation of source resources among alternative uses, expected return must be balanced against its opportunity cost. It is a *fait accompli* to observe firms wishing to pursue several goals, of which profit maximization is of primary objective. Every firm or an organization wish to maximize profits, while at the same time minimizes expenses.

Significance

Finance guides and regulates investment decisions and expenditure of administers economic activities. The scope of finance is vast and determined by the financial requirements of the business organization. The objective provides a frame work for optimum financial decision – making. In other words, to ensure optimum decisions the goals of financial management must be made more clear. The financial management functions covers decision making in three inter-related areas, namely investment, financing and dividend policy. The financial manager has to take these decisions with reference to the objectives of the firm. Financial management provides a framework for selecting a proper course of action and deciding a viable commercial strategy. The main objective of a business is to maximize the owners economic welfare. The goals of financial management of a corporate enterprise succinctly brought out by Alfred Rappaport which is reproduced below: "In a market based economy which recognize the rights of private property, the only social responsibility of business

enterprise has certain well thought out objectives. It is argued that the achievement of central goal of maximisation of the owner's economic welfare depends upon the adoption of two criteria, viz., i) profit maximisation; and (ii) wealth maximisation.

Profit Maximisation : The term 'profit maximization' implies generation of largest amount of profits over the time period being analysed, secondary to Prof. Peter Drucker, business profits play a functional role in three different ways. In the words of Peter Drucker.

i) profits indicate the effectiveness of business profits
ii) they provide the premium to cover costs of staying in business
iii) they ensure supply of future capital.

Profits are source of funds from which organizations are able to defray certain expenses like replacement, obsolescence, marketing etc.

Maximization of profits for a long term is desirable and appreciable. The tendency to maximize profits in the short run may invite innumerable problems to the organization concerned. In fact, maximization of profits in the short run may give an impression of being exploitative. The extent of uncertainty in business increases the appreciation of proprietor / partner / company and hence many prefer short-run profit maximisation to long –run profit maximisaiton.

The underlying basic of profit maximization is efficiency. It is assumed that profit maximization causes the efficient allocation of resources under the competitive impact conditions and profit is regarded as the most appropriate measure of a firm's performance.

Arguments in favour of profit maximization

Arguments in favour of profit maximization as the objective of business are enumerated below:

Profit maximisation is considered as an important goal in financial decision-making in an organisation. It ensures that firm utilizes its available resources most efficiently under conditions of competitive markets. Profit maximisation as corporate goal is criticised by scholars mainly on following grounds:

(i) It is vague conceptually.
(ii) It ignores timing of returns.
(iii) It ignores the risk factor.
(iv) it may tempt to make such decisions which may in the long run prove disastrous.
(v) Its emphasis is generally on short run projects.
(vi) It may cause decreasing share prices.
(vii) The profit is only one of the many objectives and variables that a firm considers.

Wealth Maximisation

Wealth Maximisation refers to all the efforts put in for maximizing the net present value (i.e. wealth) of any particular course of action which is just the difference between the gross present value of its benefits and the amount of investment required to achieve such benefits.

Wealth maximisation principle is also consistent with the objective or'maximising the economic welfare of the proprietors of the firm. This, in turn, calls for an all out bid to maximise the market value of shares of that firm which are held by its owners. As Van Horne aptly remarks, the market price of the shares of a company (firm) serves as a performance index or report card of its progress. It indicates how well management is doing on behalf of its share-holders.

able to maximise the value of such shares.

Financial management is concerned with mobilization of financial resources and their effective utilization towards achieving the organization its goals. Its main objective is to use funds in such a way that the earnings are maximized. Financial management provides a framework for selecting a proper course of action and deciding a viable commercial strategy. A business firm has a number of objectives. Peter Driven has outlined the possible objectives of a firm as follows.

- Market standing
- Innovation
- Productivity
- Economical use of physical and financial resources
- Increasing the profitability
- Improved performance
- Development of worker's performance and co-operatives
- Public responsibility

The wealth maximizing criterion is based on the concept of cash flows generated by the decision rather than according profit which is the basis of the measurement of benefits in the case of profit maximization criterion. Measuring benefits in terms of cash flows avoids the ambiguity associated with accounting profits.

Presently, maximisation of present value (or wealth) of a course of action is considered appropriate operationally flexible goal for financial decision-making in an organisation. The net present value or wealth can be defined more explicitly in the following way:

$$W = \frac{A_1}{(1+K_1)} + \frac{A_2}{(1+K_1)} + \frac{A_3}{(1+K_1)} + \ldots + \frac{A_n}{(1+K_1)} - Co = \frac{\Sigma A_t}{\Sigma(1+K)t} - Co$$

Profit Maximisation versus Shareholder Wealth Maximization

Profit maximization is basically a single-period or, at the most, a short-term goal. It is usually interpreted to mean the maximization of profits within a given period of time. A firm may maximize its short-term profits at the expense of its long-term profitability and still realize this goal. In contrast, shareholder wealth maximization is *a* long-term goal shareholders are interested in future as well as present profits. Wealth maximization is generally preferred because it considers (1) wealth for the long term, (2) risk or uncertainty. (3) the timing of returns, and (4) the "shareholders' return. The following table provides a summary of the advantages and disadvantages of these two often conflicting goals.

Summary

Objectives or goals are the end results towards which activities are aimed. Formulation and definition of objectives of an organization is the basic requirement of effective management. Finance guides and regulates investment decisions and expenditure of administers economic activities. The scope of finance is vast and determined by the financial requirements of the business organization. The objective provides a frame work for optimum financial decision – making. In other words, to ensure optimum decisions the goals of financial management must be made more clear. The financial management functions covers decision making in three inter-related areas, namely investment, financing and dividend policy. The financial manager has to take these decisions with reference to the objectives of the firm. The financial decisions can rationally be made only when the business enterprise has certain well thought out objectives. It is argued that the achievement of central goal of maximisation of the owner's economic welfare depends upon the adoption of two criteria, viz., i) profit maximisation; and (ii) wealth maximisation. The term 'profit maximization' implies generation of largest amount of profits over the time period. Wealth Maximisation refers to all the efforts put in for maximizing the net present value (i.e. wealth) of any particular course of action which is just the difference between the gross present value of its benefits and the amount of investment required to achieve such benefits. The other objectives of financial management include a) To build up reserves for growth and expansion, b) To ensure a fair return to shareholders and c) To ensure maximum operational efficiency by efficient and effective utilization of finances.

LESSON – 5

FINANCIAL DECISIONS

LESSON OUTLINE

- Introduction
- Financial decision – types
- Investment decisions
- Financing decision
- Dividend decision
- Liquidity
- Relationship of financial Decisions
- Factors influencing Financial decisions

LEARNING OBJECTIVES

After reading this lesson, you should be able to

- To understand the various types of financial decisions
- To describe the relationship of financial decisions
- To identify the various factors influencing financial decisions.

acquired, pattern of capitalisation, distribution of firm's income etc. We can classify these decisions into three major groups :

1. Investment decisions
2. Financing decision.
3. Dividend decisions.
4. Liquidity decisions.

1. **Investment Decisions / Capital Budgeting Decisions**

Investment Decision relates to the determination of total amount of assets to be held in the firm, the composition of these assets and the business risk complexities of the firm as perceived by the investors. It is the most important financial decision. Since funds involve cost and are available in a limited quantity, its proper utilization is very necessary to achieve the goal of wealth maximasation.

The investment decisions can be classified under two broad groups; (i) long-term investment decision and *(ii)* Short-term, investment decision. The long-term investment decision is referred to as the capital budgeting and the short-term investment decision as working capital management.

Capital budgeting is the process of making investment decisions in capital expenditure. These are expenditures, the benefits of which are expected to be received over a long period of time exceeding one year. The finance manager has to assess the profitability of various projects before committing the funds. The investment proposals should be evaluated in terms of expected profitability, costs involved and the risks associated with the projects. The investment decision is important not only for the setting up of new units but also for the expansion of present units, replacement of permanent assets, research

of profits of a company which is distributed by it among its shareholders. It is

the reward of shareholders for investments made by them in the share capital of the company. The dividend decision is concerned with the quantum of profits to be distributed among shareholders. A decision has to be taken whether ail the profits are to be distributed, to retain all the profits in business or to keep a part of profits in the business and distribute others among shareholders. The higher rate of dividend may raise the market price of shares and thus, maximise the wealth of shareholders. The firm should also consider the question of dividend stability, stock dividend (bonus shares) and cash dividend.

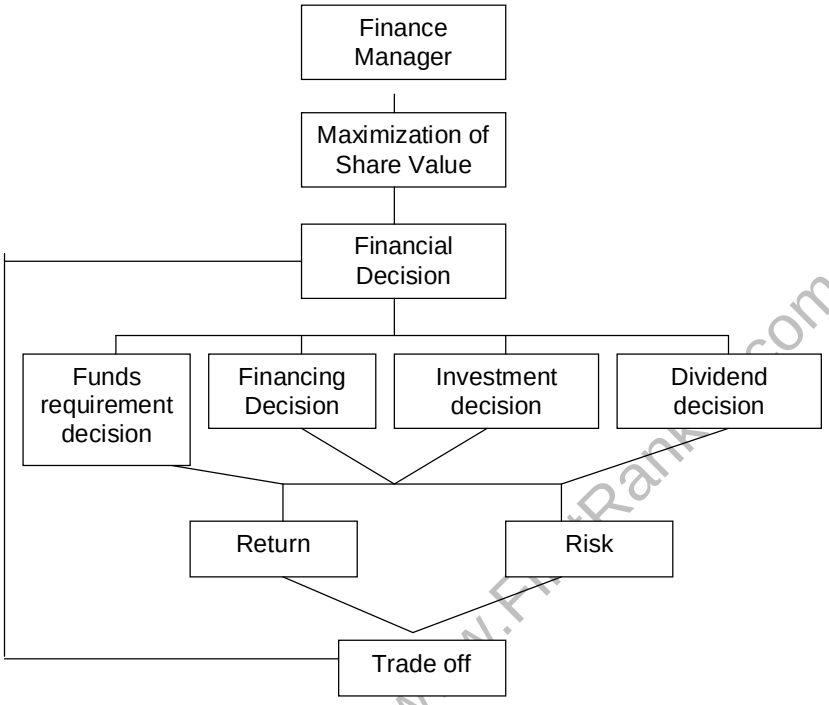
4. Liquidity Decisions

Liquidity and profitability are closely related. Obviously, liquidity and profitability goals conflict in most of the decisions. The finance manager always perceives / faces the task of balancing liquidity and profitability. The term liquidity implies the ability of the firm to meet bills and the firm's cash reserves to meet emergencies. Whereas the profitability means the ability of the firm to obtain highest returns within the funds available. As said earlier, striking a proper balance between liquidity and profitability is an ardous task. If a finance manager wants to meet all the bills, then profitability will decline similarly where he wants to invest funds in short term securities he may not be having adequate funds to pay-off its creditors. Lack of liquidity in extreme situations can lead to the firm's insolvency.

Risk – Return Trade Off

Further where the company is desirous of mobilizing funds from outside sources, it is required to pay interest at fixed period. Hence liquidity is reduced. A successful finance manager has to ensure acceleration of cash receipts (cash inflows in to business) and deceleration of cash (cash outflows) from the firm.

Interrelationship between market value, financial decisions and risk-return trade off



Value of Firm – Risk Return

The finance manager tries to achieve the proper balance between, the basic considerations of 'risk and return' associated with various financial management decisions to maximise the market, value, of the firm.

It is well known that "higher the return other things being equal, higher the market value; higher the risk, other things being equal, lower the market

Taxation policy
Financial institutions / banks lending policy

Internal factors

Nature of business
Age of the firm
Size of the business
Extent and trend of earnings
Liquidity position
Working capital requirements
Composition of assets
Nature of risk and expected return.

Summary

Finance comprises of blend of knowledge of credit, securities, financial related legislations, financial instruments, financial markets and financial system. As finance is a scarce resource, it must be systematically raised form the cheapest source of funds and must be judiciously utilized for the development and growth of the organization. Financial decisions refer to decisions concerning financial matters of a business firm. There are many kinds of financial management decisions that the firm makers in pursuit of maximising shareholder's wealth, viz., kind of assets to be acquired, pattern of capitalisation, distribution of firm's income etc. We can classify these decisions into three major groups : 1) Investment decisions, 2) Financing decision, 3) Dividend decisions, and 4) Liquidity decisions.

Investment Decision relates to the determination of total amount of assets to be held in the firm, the composition of these assets and the business

Keywords

Financial decisions: It refer to decisions concerning financial matters of a business firm.

Risk Free Rate : It is a compensation for time and risk premium for risk.

Risk – Return Trade Off: Levelling of risk and return is known as risk – return trade off.

Review Questions

1) What is meant by financial decision?
2) Explain investment decision.
3) Explain liquidity Vs. Profitability?
4) Discuss the significance of various financial decisions.
5) What is meant by liquidity decision?
6) Explain risk-return trade off.

*****

Capital budgeting decisions are of paramount importance in financial decisions, because efficient allocation of capital resources is one of the most crucial decisions of financial management. Capital budgeting is budgeting for capital projects. It is significant because it deals with right kind of evaluation of projects. The exercise involves ascertaining / estimating cash inflows and outflows, matching the cash inflows with the outflows appropriately and evaluation of desirability of the project. It is a managerial technique of meeting capital expenditure with the overall objectives of the firm. Capital budgeting means planning for capital assets. It is a complex process as it involves decisions relating to the investment of current funds for the benefit to be achieved in future. The overall objective of capital budgeting is to maximize the profitability of the firm / the return on investment.

Capital Expenditure

A capital expenditure is an expenditure incurred for acquiring or improving the fixed assets, the benefits of which are expected to be received over a number of years in future. The following are some of the examples of capital expenditure.

1) Cost of acquisition of permanent assets such as land & buildings, plant & machinery, goodwill etc.

2) Cost of addition, expansion, improvement or alteration in the fixed assets.

3) Cost of replacement of permanent assets.

4) Research and development project cost etc.

Capital expenditure involves non-flexible long term commitment of funds.

Capital Budgeting – Definition

"Capital budgeting" has been formally defined as follows.

- Replacement and modernization

The firm's value will increase in investments that are profitable. They add to the shareholders' wealth. The investment will add to the shareholders' wealth if it yields benefits, in excess of the minimum benefits as per the opportunity cost of capital.

It is clear from the above discussion what capital investment proposals involve

a) Longer gestation period
b) Substantial capital outlay
c) Technological considerations
d) Irreversible decisions
e) Environmental issues

Capital Budgeting – Significance

1. Capital budgeting involves capital rationing. This is the available funds that have to be allocated to competing projects in order of project potential. Normally the individuality of project poses the problem of capital rationing due to the fact that required funds and available funds may not be the same.
2. Capital budget becomes a control device when it is employed to control expenditure. Because manned outlays are limits to actual expenditure, the concern has to investigate the variation in order to keep expenditure under control.
3. A firm contemplating a major capital expenditure programme may need to arrange funds many years in advance to be sure of having the funds when required.

2. **Project evaluation**. Project evaluation involves two steps: i) estimation of benefits and costs and ii) selection of an appropriate criterion to judge the desirability of the projects. The evaluation of projects should be done by an impartial group. The criterion selected must be consistent with the firm's objective of maximizing its market value.
3. **Project Selection**. There is no uniform selection procedure for investment proposals. Since capital budgeting decisions are of crucial importance, the final approval of the projects should rest on top management.
4. **Project Execution**. After the final selection of investment proposals, funds are earmarked for capital expenditures. Funds for the purpose of project execution should be spent in accordance with appropriations made in the capital budget.

Factors Influencing Investment Decisions

The main factors which, influence capital investment are :

1. ***Technological change***. In modem times, one often finds fast obsolescence of technology. New technology, which is relatively more efficient, takes the place of old technology; the latter getting downgraded to some less important applications. However, in taking a decision of this type, the management has to consider the cost of new equipment *vis-a-vis* the productive efficiencies of the new as well as the old equipments. However, while evaluating the cost of new equipment, the management should not take into, account its full accounting cost (as the equipment lasts for years) but its incremental cost. Also, the cost of new equipment is often partly offset by the salvage value of the replaced equipment.

investment proposals, it is therefore essential for the firm to estimate future returns or benefits accruing from the investment.

Kinds of Capital Budgeting Decisions

The overall objective of capital budgeting is to maximise the profitability of a firm or the return on investment. This objective can be achieved either by increasing the revenues or by reducing costs. Thus, capital budgeting decisions can be broadly classified into two categories:

(a) those which increase revenue, and

(b) those which reduce costs

The first category of capital budgeting decisions are expected to increase revenue of the firm through expansion of the production capacity or size of operations by adding a new product line. The second category increases the earnings of the firm by reducing costs and includes decisions relating to replacement of obsolete, outmoded or worn out assets. In such cases, a firm has to decide whether to continue with the same asset or replace it. Such a decision is taken by the firm by evaluating the benefit from replacement of the asset in the form of reduction in operating costs and the cost/cash outlay needed for replacement of the asset. Both categories of above decisions involve investment in fixed assets but the basic diffemce between the two decisions lies in the fact that increasing revenue investment decisions are subject to more uncertainty as compared to cost reducing investment decisions.

Further, in view of the investment proposals under consideration, capital budgeting decisions may also be classified as.

(i) Accept / Reject Decisions

(ii) Mutually Exclusive Project Decisions

(iii) Capital Rationing Decisions.

ascertaining / estimating cash inflows and outflows, matching the cash inflows with the outflows appropriately and evaluation of desirability of the project. It is a managerial technique of meeting capital expenditure with the overall objectives of the firm. Capital budgeting means planning for capital assets.

Capital budgeting involves capital rationing. This is the available funds that have to be allocated to competing projects in order of project potential. Normally the individuality of project poses the problem of capital rationing due to the fact that required funds and available funds may not be the same. Capital budget becomes a control device when it is employed to control expenditure. Because manned outlays are limits to actual expenditure, the concern has to investigate the variation in order to keep expenditure under control. Capital budgeting provides useful tool with the help of which the management can reach prudent investment decision. Capital projects involve huge outlay and last for years. The Important factors influencing investment decisions include Technological change, competitors' strategy, demand forecast, type of management, fiscal policy, cash flows and return expected from the investment.

The overall objective of capital budgeting is to maximise the profitability of a firm or the return on investment. This objective can be achieved either by increasing the revenues or by reducing costs. Thus, capital budgeting decisions can be broadly classified into two categories: a*)* those which increase revenue, and *b)* those which reduce costs.

Further, in view of the investment proposals under consideration, capital budgeting decisions may also be classified as. i) Accept / Reject Decisions, ii) Mutually Exclusive Project Decisions and iii) Capital Rationing Decisions.

LESSON – 2

EVALUATION OF CAPITAL PROJECTS

LESSON OUTLINE

- Investment evaluation criteria
- Features required by Investment evaluation criteria
- Techniques of investment Appraisal
- Discounted cash flow (DCF) Criteria
- Non-discounted cash flow Criteria
- Comparison between NPV & IRR
- Similarities of results under NPV and IRR
- Problems & key

LEARNING OBJECTIVES

After reading this lesson you should be able to

- Understand the Investment evaluation criteria
- To spell out the features required by Investment evaluation criteria
- To analyse Techniques of investment Appraisal Methods
- To make a comparison between NPV and IRR
- To identify the similarities of results under NPV and IRR

Capital Costs, has outlined some of the features that must be had by a sound investment evaluation criteria.

- It should consider all cash flows to determine the true profitability of the project.
- It should provide for an objective and unambiguous way of separating good projects from bad projects.
- It should help ranking of projects according to their true profitability.
- It should recognise the fact that bigger cash flows are preferable to smaller ones and early cash flows are preferable to later ones.
- It should help to choose among mutually exclusive projects that project which maximises the shareholders' wealth.
- It should be a criterion which is applicable to any conceivable investment project independent of others.

Techniques of Investment Appraisal

Discounted Cash Flow (DCF) Criteria

- Net present value (NPV)
- Internal rate of return (IRR)
- Profitability index (PI)

Non-discounted Cash Flow Criteria

- Pay-back period
- Discounted payback period
- Accounting rate of return (ARR).

Non-discounted Cash Flow Criteria

Payback period Method : This method is popularly known as pay off, pay-out, recoupment period method also. It gives the number of years in which the total investment in a particular capital expenditure pays back itself. This method is

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

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

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

(4) It is useful for approximating the value of risky investments whose rate of capital wastage (economic depreciation and obsolescence rate) is hard to predict. Since the payback period method weights only return heavily and ignores distant returns it contains a built-in hedge against the possibility of limited economic life.

(5) When the payback period is set at a large "number of years and incomes streams are uniform each year, the payback criterion is a good approximation to the reciprocal of the internal rate of discount.

Payback Method – Demerits : This method has its own limitations and disadvantages despite its simplicity and rapidity. Here are a number of demerits and disadvantages claimed by its opponents:-

(1) It treats each asset individually in isolation with the other assets, while assets in practice can not be treated in isolation.

(2) The method is delicate and rigid. A slight change in the division of labour and cost of maintenance will affect the earnings and such may also affect the payback period.

(3) It overplays the importance of liquidity as a goal of the capital expenditure decisions. While no firm can ignore its liquidity requirements but there are more

$$\text{Rate of Return} = \frac{\text{Average Annual Profits}}{\text{Outlay of the Project}} \times 100$$

Thus, the average rate of return method considers whole earnings over the entire economic life of an asset. Higher the percentage of return, the project will be acceptable.

(ii) **Earnings per unit of Money Invested -** As per this method, we find out the total net earnings and then divide it by the total investment. This gives us the average rate of return per unit of amount (i.e. per rupee) invested in the project. As per formula:

$$\text{Earnings per unit of investment} = \frac{\text{Total Earnings}}{\text{Total Outlay of the Project}}$$

The higher the earnings per unit, the project deserves to be selected.

(iii) Return on Average Amount of Investment Method - Under this method the percentage return on average amount of investment is calculated. To calculate the average investment the outlay of the projects is divided by two. As per formula :

$$\text{Average Investment} = \frac{\text{Unrecovered Capital at the beginning} + \text{Unrecouped capital at the end}}{2}$$

$$\text{Or} \quad = \frac{\text{Initial investment} + \text{scrap value}}{2}$$

(2) It is simply an averaging technique which does not take into account the various impacts of external factors on over-all profits of the firm.

(3) This method also ignores the time factor which is very crucial in business decision.

(4) This method does not determine the fair rate of return on investments. It is left to the discretion of the management.

Discounted Cashflows Techniques

Another method of computing expected rates of return is the present value method. The method is popularly known as Discounted Cashflow Method also. This method involves calculating the present value of the cash benefits discounted at a rate equal to the firm's cost of capital. In other words, the "present value of an investment is the maximum amount a firm could pay for the opportunity of making the investment without being financially worse off."

The financial executive compares the present values with the cost of the proposal. If the present value is greater than the net investment, the proposal should be accepted. Conversely, if the present value is smaller than the net investment, the return is less than the cost of financing. Making the investment in this case will cause a financial loss to the firm.

There are four methods to judge the profitability of different proposals on the basis of this technique

(i) **Net Present Value Method** - This method is also known as Excess Present Value or Net Gain Method. To implement this approach, we simply find the present value of the expected net cash inflows of an investment discounted at the cost of capital and subtract from it the initial cost outlay of the project. If the net present value is positive, the project should be accepted : if negative, it should be rejected.

(iii) **Profitability Index Method -** One major disadvantage of the present value method is that it is not easy to rank projects on the basis of net present value particularly when the cost of projects differ significantly. To compare such projects the present value profitability index is prepared. The index establishes relationship between cash-inflows and the amount of investment as per formula given below:

$$\text{V.Index} = \frac{\text{NPV}}{\text{Investment}} \times 100 \quad \text{or} \quad \frac{\text{GPV}}{\text{Investment}} \times 100$$

For example, the profitability index of the Rs. *5,000* investment discussed in Net Present Value Method above would be :

$$\frac{272}{3000} \times 100 = 5.44 \quad \text{or} \quad \frac{5272}{5000} \times 100 = 105.44$$

The higher profitability index, the more desirable is the investment. Thus, this index provides a ready compatibility of investment having various magnitudes. By computing profitability indices for various projects, the financial manager can rank them in order of their respective rates of profitability.

(iv) **Terminal Value Method** - This approach separates the timing of the cash-inflows and outflows more distinctly. Behind this approach is the assumption that each cash-inflow is re-invested in another assets at the certain rate of return from the moment it is received until the termination of the project. Then the present value of the total compounded sum is calculated and it is compared with the initialcash-outflow. The decision rule is that if the present value of the sum total of the compounded re-invested cash-inflows is greater than the present value of cash-outflows, the proposed project is

(2) It is very difficult to forecast the economic life of any investment exactly.

(3) The selection of cash-inflow is based on sales forecasts which is in itself an indeterminable element.

(4) The selection of an appropriate rate of interest is also difficult.

COMPARISON BETWEEN NPV AND IRR (NPV Vs. IRR)

The Net Present value method and the Internal Rate of Return Method are similar in the sense that both are modern techniques of capital budgeting and both take into account the time value of money. In fact, both these methods are discounted cash flow techniques. However, there are certain basic differences between these two methods of capital budgeting:

(i) In the net present value method the present value is determined by discounting the future cash flows of a project at a predetermined or specified rate called the cut off rate based on cost of capital. But under the internal rate of return method, the cash flows are discounted at a suitable rate by hit and trial method which equates the present value so calculated to the amount of the investment. Under IRR method, discount

rate is not predetermined.

(ii) The NPV method recognises the importance of market rate of interest or cost of capital. It arrives at the amount to be invested in a given project so that its anticipated earnings would recover the amount invested in the project at market rate. Contrary to this, the IRR method docs not consider the market rate of interest and seeks to determine the maximum rate of interest at which funds invested in any project could be repaid with the earnings generated by the project.

***(b)* Conflict Between NPV and IRR Results**

In case of mutually exclusive investment proposals, which compete with one another in such a manner that acceptance of one automatically excludes the acceptance of the other, the NPV method and IRR method may give contradictory results. The net present value may suggest acceptance of one proposal whereas, the internal rate of return may favour another proposal. Such conflict in rankings may be caused by any one or more of the following problems:

(i) Significant difference in the size. (amount) of cash outlays of various proposals under consideration.

(ii) Problem of difference in the cash flow patterns or timings of the various proposals and

(iii) difference in service life or unequal expected lives of the projects.

PROBLEMS AND KEY

1) Equipment A has a cost of Rs 75,000 and net cash flow of Rs 20,000 per year for six years. A substitute equipment B would cost Rs 50,000 and generate net cash flow of Rs 14,000 per year for six years. The required rate of return of both equipments is 11 per cent. Calculate the IRR and NPV for the equipments. Which equipment should be accepted and why?

Solution :

Equipment A

NPV = $20,000 \times PVAF_{6,0.11} - 75,000$

= $20,000 \times 4.231 - 75,000$

= $84,620 - 75,000$ = Rs 9,620

IRR = $20,000 \times PVAF_{6,r} = 75,000$

$PVAF_{6,r}$ = $75,000 / 20,000 = 3.75$

5) For each of the following projects compute (i) pay-back period, (ii) post pay-back profitability and (iii) post-back profitability index

a) Initial outlay Rs.50,000
Annual cash inflow (after tax but before depreciation) Rs.10,000
Estimated life 8 Years

b) Initial outlay Rs.50,000
Annual cash inflow (after tax but before depreciation)
First three years Rs.15,000
Next five years Rs. 5,000
Estimated life 8 Years
Salvage Rs. 8,000

Solution

a) i) Pay-back period = Investment / Annual Cash Flow
= 50,000 / 10,000 = 5 Years

ii) Post pay back profitability
= Annual cash inflow (estimated life–pay back period)
= 10,000 (8 – 5) = Rs. 30,000

iii) Post back profitability index = 30,000 / 50,000 x 100 = 60%

b) i) As the case inflows are the equal during the life of the investment pay back period can be calculated as:

1st year's cash inflow	=	Rs.15,000
2nd year's cash inflow	=	Rs.15,000
3rd year's cash inflow	=	Rs.15,000
4th year's cash inflow	=	Rs. 5,000
		Rs.50,000

Hence, the pay-back period is 4 years.

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
Total	85,000	42,500	42,500	90,000	45,000	45,000

	Machine E	Machine F
Average profit after tax	42,500 x 1/5 = Rs. 8500	45,000 x 1/5 = Rs. 9000
Average investment	60,000 x ½ = Rs. 30000	60,000 x ½ = Rs. 30000
Average return on average	8500/30000 x 100 = 28.33%	9000/30000 x 100 = 30%

Thus, machine F is more profitable.

7) From the following information calculate the net present value of the two projects and suggest which of the two projects should be accepted assuming a discount rate of 10%.

	Project X	Project Y
Initial investment	Rs.20,000	Rs.30,000
Estimated life	5 Years	5 Years
Scrap value	Rs. 1,000	Rs. 2,000

The profits before depreciation and after taxes (cash flows) are as follows:

	Year 1 Rs.	Year 2 Rs.	Year 3 Rs.	Year 4 Rs.	Year 5 Rs.
Project X	5000	10000	10000	3000	2000
Project Y	20000	10000	5000	3000	2000

Solution :

4	3000	.683	2049
5 (Scrap	2000	.621	1242
value)	2000	.621	1242
			34728

		Rs.
Present value of all cash inflows		34728
Less present value of initial investment		30000
(because all the investment is to be made in the first year only, the present value is the same as the cost of the initial investment)		
Net present values	=	4728

We find that net present value of Project Y is higher than that the net present value of Project X and hence it is suggested that project Y should be selected.

9) Two mutually exclusive investment proposals are being considered. The following information is available.

	Project X		Project Y	
	Rs.		Rs.	
Cost	Rs.6000		Rs. 6000	
Cash inflow				
Year	Rs.	Probability	Rs.	Probability
1	4000	.2	8000	.2
2	8000	.6	9000	.6
3	12000	.2	9000	.2

Assuming cost of capital at 10%, advise the selection of the project.

Solution :

worth of an investment project. The various techniques of investment appraisal methods include : *Discounted Cash Flow (DCF) Criteria i)* Net present value (NPV), ii) Internal rate of return (IRR) and iii) Profitability index (PI). *Non-discounted Cash Flow Criteria i)* Pay-back period, ii) Discounted payback period and iii) Accounting rate of return (ARR).

Key words

Payback period. A method of evaluating investment proposal which determines the time a project's cash inflows will take to repay the original investments of the project.

Average rate of return. Also known as the accounting rate of return *(ARK),* return on investment *(ROT)* or return on assets *(ROA), is* obtained by dividing average annual post-tax profit by the average investment.

Discount rate. The rate at which cash flows are discounted. This rate may be taken as the requiredrate of return on capital, or the cost of capital.

Internal rate of return. The *IRR* is a method of evaluating investment proposals. It is that rate of discount (or interest rate) that equals the present value of outflows to the present value of inflows, thus making *NPV=Q.*

Mutually exclusive projects. A situation in which the acceptance of one investment proposal leaves out the acceptance of another proposal.

Net Present Value. A method of evaluation consisting of comparing the present value of all net cash flows (discounted by cost of capital as the interest rate) to the initial investment cost.

LESSON – 3

RISK ANALYSIS IN CAPITAL BUDGETING

LESSON OUTLINE

- Capital rationing – meaning
- Measuring of risk and uncertainty
- Types of uncertainties
- Precautions for uncertainties
- Risk and investment proposals
- Risk and uncertainty Incorporated methods of Capital project evaluation

LEARNING OBJECTIVES

After reading this lesson you should be able to

- Understand the meaning of Capital rationing
- Know the meaning of risk and uncertainty
- To describe the types of uncertainties
- To review the precautions for uncertainties
- To identify the risk and investment proposals
- Describe the risk and uncertainty incorporated methods of capital project evaluation.

determinable. Uncertainty is a subjective phenomenon. In such situation, no observation can be drawn from frequency distribution. The risk associated with a project may be defined as the variability that is likely to occur in the future returns from the project. A wide range of factors give rise to risk and uncertainty in capital investment, viz. competition, technological development, changes in consumer preferences, economic factors, both general and those peculiar to the investment, political factors etc. Inflation and deflation are bound to affect the investment decision in future period rendering the deeper of uncertainty more severe and enhancing the scope of risk. Technological developments are other factors that enhance the degree of risk and uncertainty by rendering the plants or equipments obsolete and the product out of date. It is worth noting that distinction between risk and uncertainty is of academic interest only. Practically no generally accepted methods could so far be evolved to deal with situation of uncertainty while there are innumerable techniques to deal with risk. In view of this, the terms risk and uncertainty are used exchangeably in the discussion of capital budgeting.

The capital budgeting decision is based upon the benefits derived from the project. These benefits are measured in terms of cash flows. These cash flows are estimates. The estimation of future returns is done on the basis of various assumptions. The actual return in terms of cash inflows depends on a variety of factors such as price, sales volume, effectiveness of the advertising campaign, competition, cost of raw materials, etc. The accuracy of the estimates of future returns and therefore the reliability of the investment decision would largely depend upon the precision with which these factors are forecast. In reality, the actual returns will vary from the estimate. This is referred to risk. The term 'risk' with reference to investment decisions may be defined as the variability in the actual returns emanating from a project in future over its

dispersion of income; (ii) Measures can be adopted to prevent profit from falling below some minimum level; (iii) Measures can be adopted to increase the firm's ability to withstand unfavourable economic outcomes.

Risk And Investment Proposals

There are two measures of incorporating risk in the decision – making. They are: 1) The expected value and 2) The standard deviation.

1) The Expected Value : In a situation of certainty, any investment gives only one possible cash flow out in a risky situation several cash flows are possible, each with a given probability. By as certaining the average of all such possible outcomes $(X)_1$ weighed by their respective probabilities (P) we can get a single value for the cash flows. The value is known as expected value E (X), whose generalized expression is

$$E(X) = \sum_{i=1}^{n} X_i p_i$$

2) The Standard Deviation : The statistical concept of standard deviation is used as a yard stick that reflects the variations of possible outcomes from its mean value. The standard deviation is calculated as:

$$\sigma = \sqrt{\sum_{n} (X_i - \overline{X})^{-2} P_i}$$

decision tree analysis etc.

i. Conservative Methods

The conservative methods of risk handling are dealt with now.

1. Shorter Payback Period. According to this method, projects with shorter payback period are normally preferred to those with longer payback period. It would be more effective when it is combined with “cut off period". Cut off period denotes the risk tolerance level of the firms. For example, a firm has three projects. A , B and C for consideration with different economic lives say 15,16 and 8 years respectively and with payback periods of say 6, 7 and 5 years. Of these three, project C will be preferred, for its payback period is the shortest. Suppose, the cut off period is 4 years, .then all the three projects will be rejected.

2. Risk Adjusted Discount Rate (RADR). Risk Adjusted Discount Rate is based on the same logic as the net present value method. Under this method, discount rate is adjusted in accordance with the degree of risk. That is, a risk discount factor (known as risk-premium rate) is determined and added to the discount factor (risk free rate) otherwise used for calculating net present value. For example, the rate of interest (r) employed in the discounting is 10 per cent and the risk discount factor or degrees of risk (d) are 2, 4 and 5 per cent for mildly risky, moderately risky and high risk (or speculative) projects respectively then the total rate of discount (D) would respectively be 12 per cent, 14 per cent and 15 .per cent.

That is RADR = 1/ (8+r+d). The idea is the greater the risk the higher the discount rate. That is, for the first year the total discount factor, D= 1 / (1+r+d) for the second year RADR = 1 / (1+r+d)2 and so on.

Risk Adjusted Discount Rate Method – Demerits :

i) The value of discount factor must necessarily remain subjective as it is primarily based on investor's attitude towards risk. .

ii) A uniform risk discount factor used for discounting al future returns is unscientific as-it implies the risk level of investment remains same over the years where as in practice is not so.

Certainty-Equivalent Coefficient Approach. This risk element in any decision is often characterized by the two Outcomes: the 'potential gain' at the one end and the 'potential loss' at the other. These are respectively called the focal gain and focal loss. In this connection. Shackle proposes the concept of "potential surprise" which is a unit of measurement indicating the decision-maker's surprise at the occurrence of an event other than what he was expecting. He also introduces "another concept - the "certainty equivalent" of risky investment. For an investment X with a given degree of risk, investor can always find another risk less investment Xi such that he is indifferent between X arid Xi. The difference between X and Xi is implicitly the risk ^discount.

The risk level of the project under this method is taken into account by adjusting the expected cash inflows and the discount rate. Thus the expected cash inflows are reduced to a conservative level by a risk-adjustment factor (also called correction factor). This factor is expressed in terms of Certainty - Equivalent Co-efficient which is the ratio of risk less cash flows to risky cash lows. Thus Certainty — Equivalent Co-efficient;

$$= \frac{\text{Risk less cash flow}}{\text{Risky cash flows}}$$

the variability of the return. This explains how sensitive the cash flows or under

the above mentioned different situations. The larger is the difference between the pessimistic and optimistic cash flows, the more risky is the project.

Decision Tree Analysis

Decision tree analysis is another technique which is helpful in tackling risky capital investment proposals. Decision tree is a graphic display of relationship between a present decision and possible future events, future decisions and their consequence. The sequence of event is mapped out over time in a format resembling branches of a tree. In other words, it is pictorial representation in tree from which indicates the magnitude probability and inter-relationship of all possible outcomes.

Elements Of Decision Theory

Managerial Economics focuses attention on the development of tools for finding out an optimal or best solution for the specified objectives in business. Any decision has the following elements:

1. The Decision Maker.
2. Objectives or goals sought to be achieved by the decision maker; for example, maximisation of profit or sales revenue may be the objective of the business.
3. A set of choice alternatives. For example, in Capital budgeting, the available projects.
4. A set of outcomes or pay-offs with each alternatives; that is net benefits from the projects. Outcomes may be certain or uncertain. In case of former, the selection of any alternative leads uniquely to a specific pay-off. In case of latter, any one of a number of outcomes may be associated with any specific decision.

Risk Return Analysis for Multi Projects

When multiple projects are considered together, what is the overall risk of all projects put together? Is it the aggregate average of std. deviation of NPV of all projects? No, it is not. Then What? Now another variable has to be brought to the scene. That is the correlation coefficient between NPVs of pairs of projects. When two projects are considered together, the variation in the combined NPV is influenced by the extent of correlation between NPVs of the projects in question. A high correlation results in high risk and vice versa. So, the risk of all projects put together in the form 'of combined std. deviation is given by the formula:

$\sigma_p = [\Sigma P_{ij} \sigma_i \sigma_j]^{1/2}$

where,

σ_p – combined portfolio std. deviation

P_{ij} – correlation between NPVs of pairs of projects.

$\sigma_i\sigma_j$ – std. deviation of i^{th} and j^{th} projects, i.e., any pair time.

Summary

Capital rationing refers to a situation where a firm is not in a position to invest in all profitable projects due to the constraints on availability of funds. We know that the resources are always limited and the demand for them far exceeds their availability, It is for this reason that the firm cannot take up ail the projects though profitable, and has to select the combination of proposals that will yield the greatest profitability.

Risk and uncertainty are quite inherent in capital budgeting decisions. Future is uncertain and involve risk. Risk involves situations in which the probabilities of an event occurring are known and these probabilities are objectively determinable. Uncertainty is a subjective phenomenon. In such

Risk. Refers to a situation in which there are several possible outcomes, each outcome occurring with a probability that is known to the decision-maker.

Risk-adjusted discount rate (RADR). Sum of risk-free interest rate and a risk premium. The former is often taken as the interest rate on government securities. The risk premium is what the decision-maker subjectively considers as the additional return necessary to compensate for additional risk.

Standard deviation. The degree of dispersion of possible outcomes around the expected value. It is the square root of the weighted average of the squared deviations of all possible outcomes from the expected value.

Certainty equivalent. A ratio of certain cashflow and the expected value of a risky cashflow between which the decision-maker is indifferent.

Coefficient of variation. A measure of risk is used for comparing standard deviations of projects with unequal expected values.

Uncertainty. Refers to situations in which there are several possible outcomes of an action whose probabilities are either not known or are not meaningful.

Decision Tree. A graphic device that shows a sequence of strategic decisions and expected consequences under each possible situation.

Maximax. Maximum profit is found for each act and the strategy in which the maximum profit is largest is chosen.

Maximin. When maximum of the minimums are selected. This criterion is used by decision-makers with pessimistic and conservative outlook.

Minimax. When minimum of the maximums are selected. This criterion is used for minimising cost (unlike maximin, where pay-off and profit are maximised).

Minimax Regret. Finding maximax regret value for each act, and then choosing the act having minimum of these maximum regret values.

Opportunity Loss (or Regret). The difference between actual profit from a decision and the profit from the best decision for the event.

LESSON – IV

COST OF CAPITAL

LESSON OUTLINE

- introduction
- definition of cost of capital
- Significance
- Determination of cost of Capital – problems involved
- Measurement of cost of Capital
  - Cost of preference share Capital
  - Cost of equity capital
  - Cost of retained earnings
  - Weighted average cost of Capital

LEARNING OBJECTIVES

After reading this lesson you should be able to

- Understand the meaning of Cost of capital
- Know the significance of cost of capital
- Identify the problems in determination of cost of capital
- Understand the various methods of measuring the cost of capital.

iii) According to James C. Vanhorne, the cost of capital represents a cut off rate for the allocation of capital investment of projects. It is the rate of return on a project that will have unchanged the market price of the stock.

Cost of Capital – Significance

The determination of the firm's cost of capital is important from the point of view of both capital budgeting as well as capital structure planning decisions.

(i) ***Capital budgeting decisions.*** In capital budgeting decisions, the cost of capital is often used as a discount rate on the basis of which the firm's future cash flows are discounted to find out their present values. Thus, the cost of capital is the very basis for financial appraisal of new capital expenditure proposals. The decision of the finance manager will be irrational and wrong in case the cost of capital is not correctly determined. This is because the business must earn least at a rate which equals to its cost capital in order to make at least a break-even.

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

for computing the cost of capital. As there are different views, the funds manager has to face a difficult task in subscribing and selecting an appropriate approach.

iii) Marginal Vs average cost of capital : For decision – making purposes, it is the future cost of capital and not historical cost of capital which is relevant. If therefore creates another problem whether to consider marginal cost of capital, i.e., cost of additional funds or the average cost of capital.

iv) Problem of weights: The assignment of weights of each type of funds is a complex issue. If a financial executive wants to ascertain the average cost of capital than the problem of weights also arises. The finance manger has to make a choice between the book value of each source of funds and the market value of each source of funds. Both have their any merits as well as weaknesses.

Measurement of The Cost Of Capital

The cost of the different sources of financing represents the components of continued cost. Each firm has ideal capital mix of various sources of funds; external sources (debt, preferred stock and equity stock) and internal sources (reserves and surplus). Determining of cost of capital involves relating the expected outcome of the specific source of capital to the market or book value of that source. Expected income in thin context comprises interest, discount on debt, dividends, EPS or similar other variables most suitable to the particular case. The computation of the cost of capital involves two steps. i) The computation of the different elements of the cost in terms of the cost of the different source of finance, and ii) the calculation of the overall cost by combining the specific cost into a composite cost.

methods have been suggested, but no method is clearly the best. Here, three popular approaches for estimating cost of equity capital are presented. Like preference capital, cost of equity capital is also calculated before-cost, as tax does not affect this cost.

Method I. The Risk-Free Rate Plus Risk Premium.

Since the equity holders are paid only after the debt servicing is done, it is generally found that investment is equity is riskier in than investment in bonds. Therefore, an investor will demand a return on equity (r_e) which will consist of: (i) a risk free return usually associated with return on government bonds, plus (ii) a premium for additional risk. There are two sources of risk which affect the risk premium :

(1) the additional risk undertaken by investing in private securities rather than government securities.
(2) The risk of buying equity stock rather than bond of a private firm.

The first type of risk is calculated by taking a difference between the interest on firm's bonds and on government bonds. For the second type of risk, a rule of thumb is used. Based on their judgement, the financial analysts have come to believe that the return on firm's equity is about 3 to 5 per cent more than that on the debt. We may take its mid-point (*i.e., 4* per cent) as an estimate of premium for second type of risk. Now, suppose risk free rate is 10 per cent and firm's bond yield 15 per cent, the total risk premium *(p)* can be calculated as:

$$p = (0.15 - 0.10) + 0.04 = 0.09$$

The firm's cost of equity capital (Cg) (which is the sym of risk-free return plus premium for additional risk) would, therefore, be

$(1+C_e)$ $(1+C_e)^2$ $(1+C_e)^n$

This being a geometric series we can write it as

$$P = \frac{D_0(1+g)}{(1+C_e)} + \frac{1}{(1+g)(C_e-g)} = D_0 \frac{(1+g)}{1-\frac{(1+g)}{(1+C_e)}}$$

$$C_e = \frac{D_0(1+g)}{P} + g = \frac{D_1}{P} + g$$

Though this method is scientific, one is not sure how to determine the growth rate of dividend *(g)*.

Method III: Capital Asset Pricing Model (CAPM). This approach is based on the principle that risk and return of an investment are positively correlated—more risky the investment, higher are the desired returns. This model emphasizes not only the risk differential between equity (or common stock) and government bond but also risk differential among various common stocks.

The P coefficient is used as a risk-index. It measures relative risk among stocks. The beta coefficient may be defined as "the ratio of variability in return on a given stock to variability in return for all stocks," The P is calculated by regression analysis, using regression equation $k_i^a = \alpha + \beta k_i^m$, where k_i^a is the return on equity of firm a in the i^{th} period and k_i^m is the return on all equity in the market in the i^{th} period. The estimated value of β is known as the beta

income tax differs from shareholder to shareholder, depending upon the tax bracket to which he belongs. Thus, before-tax cost of retained earnings (C_{re}) and before-tax cost of equity capital (C_e) are equal; but once the impact of tax is also included then the cost of retained earnings is less than the cost of equity capital, the difference being the personal income tax. For example, assume that the company has Rs. 100 of retained earnings and that there is a uniform personal income tax rate of 30 per cent. This means that if to shareholders are distributed Rs. 100 of retained earnings, their income would in fact increase by Rs. 70 (= Rs. 100 - Rs. 30). In other words, the after-tax opportunity cost of retained earnings is Rs. 70. Or, the cost of retained earnings is about 70% of the cost of equity capital.

Though the cost of retained earnings is always lower than cost of equity capital, a company can depend upon this source of finance only to the extent of availability of funds and willingness of shareholders. The cost of retained earnings can be stated with the help of the following formula :

$$C_{re} = \frac{E\,(1 - T_p)}{MP} \times 100$$

where, C_{re} is the cost of retained earnings; *E is* the earnings per equity; T_p is the personal income tax; and MP is the market price of the share.

Weighted Average Cost of Capital

Cost of capital does not refer to the cost of some specific source in the financial decision-making. It should be the over- all cost of all sources and we

TABLE

Type of Capital	Proportion in the new capital structure (W)	Before-tax cost of capital (X)	(2) x (3) (WX)
(1)	(2)	(3)	(4)
Equity capital	25	24	600
Debt. Capital	50	8	400
Preference capital	10	23	230
Retained earnings	15	19	285
	ΣW = 100		ΣWX = 1515

The formula for the weighted cost of capital before-tax is :

WX / W = 1515 / 100

= 15.15%

The weighted average cost of capital in the above imaginary illustration is 15.12 per cent, before-tax.

After-tax cost of capital = Before-tax cost (1 — tax-rate). Assuming the tax-rate as 55% after-tax cost of capital comes to :

= 15.15 (1 - 0.55)

= 15.15 x 0.45%

= 6.817% (or) 6.82%

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

payment of dividends is as follows:

1984:10.70%; 1985:11.45%; 1986:12.25%; 1987:13.11%; 1988:14.03%.

The floatation costs are estimated at 3% of the current selling price of the shares. You are required to calculate:

(a) Growth rate in dividends.

(b) Cost of funds raised by issue of equity shares assuming that the growth rate as calculated under (a) above will continue for ever.

(c) Cost of new equity shares.

Solution:

(i) Growth rate in dividends:

The amount of dividends has increased from 10.70 at the end of 1984 to 14.03 at the end of 1988 giving a compound factor of 1.3112, (i.e., 14.03/10.70).

By looking to the "compound sum of one rupee table" in the line of 4 years, one can find that the compound rate is that of 7%. Hence the growth rate in dividends is 7%.

(ii) Cost of equity:

Ke = D / MP + g

Since the dividend has been growing at the rate of 7% every year, the dividend expected by the investors immediately after the end of 1988 is likely to be 15.01% (i.e., 14.03% + 7% of 14.03%). The cost of equity capital can now be determined as follows:

Ke = 15.01/125 x 100 + 7%

= 12.01% + 7% = 19.01%.

(iii) Cost of new equity shares:

Ke = D / NP + g

20,00,000

(ii) Computation of Percentage Cost of Capital

(a) Cost of Equity Capital :

Cost of Equity (Ke)= D / MP

where, D = Expected earnings per share

and MP = Market price per share

Or Ke (%) = 1.80/12 x 100 = 15%

(b) Cost of Debenture Funds;

	At Book Value (Rs. lakhs)	At Market Price (Rs. lakhs)
Value of 15% Debentures	220.00	206.25
Interest Cost for the year	33.00	33.00
Less: Tax at 50%	16.50	16.5Q
Interest cost after tax	16.50	16.50
Cost of Debenture Fund (%)	16.50/220 x 100 = 7.5%	16.50/206.25x 100 = 8%

8) A firm whose cost of capital is 10% is considering two mutually exclusive projects A and B, the cash flows of which are as below:

Year	Project A	Project B
	Rs.	Rs.
0	-50000	-80000
1	62500	96170

Suggest which project should be taken up using (i) net present value method and (ii) the internal rate of return method.

Summary

Cost of capital plays an important role in the capital budgeting decisions. It determines the acceptability of all investment opportunities regardless of the techniques employed to judge the financial viability of a project. Cost of capital serves as capitalization rate used to determine capitalisaiton of a new concern. With the help of this very rate realworth of various investments of the firm can be evaluated. Cost of capital provides useful guidelines in determining optimal capital structure of a firm. It refers to the minimum rate of return of a firm which must earn on its investment so that the market value of the company's equity share may not fall. The determination of the firm's cost of capital is important from the point of view of both capital budgeting as well as capital structure planning decisions.

In order to compute the overall cost of capital, the manager of funds has to take the following steps: i) To determine the type of funds to be raised and their share in the total capitalization of the firm, ii) To ascertain the cost of each type of funds, and iii) To calculate the combined cost of capital if the firm by assigning weight to each type of funds in terms of quantum of funds so raised.

The cost of the different sources of financing represents the components of continued cost. Each firm has ideal capital mix of various sources of funds; external sources (debt, preferred stock and equity stock) and internal sources (reserves and surplus). Determining of cost of capital involves relating the expected outcome of the specific source of capital to the market or book value of that source. Expected income in thin context comprises interest, discount on debt, dividends, EPS or similar other variables most suitable to the particular case. The computation of the cost of capital involves two steps. i) The computation of the different elements of the cost in terms of the cost of the

REVIEW QUESTIONS

1) What is cost of capital?
2) How is cost of capital determined?
3) How do you calculate cost of debt?
4) What are the various concepts of cost of capital? Why should they be distinguished in financial management?
5) How is the cost of debt computed? How does it differ from the cost of preference capital?
6) The equity capital is cost free.' Do you agree? Give reasons.
7) 'Debt is the cheapest source of funds.' Explain.
8) What is weighted average cost of capital?
9) How is the weighted average cost of capital calculated?
10) Examine the importance of cost of capital.
11) What are the problems involved in determination of cost of capital?
12) How will you calculate cost of preference share capital?
13) How will calculate cost of retained earnings?

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LEARNING OBJECTIVES

After reading this lesson you should be able to

- explain what is financial and operating leverages and their concepts
- discuss alternate measures of leverages
- understand and appreciate the risk and return implications of leverages
- analyse the combined effects of financial and operating leverages
- understand capital structure and value of a company and their relationship
- understand and appreciate MM proposition
- explain the interest tax shield advantage of debt as well as its disadvantages in terms of cost of financial distress
- study the capital structure determinants in detail and in practice

In a levered company, the creditors are very carefully organized and they have specified claims against a company's cash flows during normal operations as well as during bankruptcy. Equity holders are always last in line, behind all creditors.

The position of each claimant in the line affects the riskiness of their cash flows. Those first in the line claim the most certain cash flows – and their removal of the most certain cash flows increases the risk of the cash flows that remain for those behind them

Creditors and equity holders are clever. Claimants further back in the line demand higher returns to compensate themselves for the additional risk they bear. Thus, shareholders require higher returns for the added financial risk of creditors.

However, shareholders know another very important facet about debt; they can make money from its use. In fact, the focal point of capital structure theory hinges on shareholders recognizing that debt use can add to their returns. The use of appropriate amount of debt adds value if the company enjoys a tax deduction for interest payments.

Thus moving away from entire equity (unlevered) to part equity and part debt (levered) financing will result in the following fruitful journey for the shareholders.

- Corporate debt increases – financial risk increase
- Total risk increase since financial risk is increasing
- Equity decreases – the number of shares of stock decreases – the company does not need as much equity financing because debt is replacing equity in the capital structure

The use of term trading on equity is derived from the fact that the debt is raised on the basis of the owner's equity - the equity is traded upon. Since the debt provider has limited participation in the company's profits he will insist on to protect his earnings and protect values represented by ownership equity.

Financial leverage is the name given to the impact on returns of a change in the extent to which the firm's assets are financed with borrowed money.

The financial leverage is employed by a company only when it is confident of earning more return on fixed charge funds than their costs.

In case the company earns more then the derived surplus will increase the return on the owner's equity

In case the company earns less on the fixed charge funds when compared to their costs, the resultant deficit will decrease the return on owner's equity

The rate of return on the owner's equity is thus levered above or below the rate of return on total assets

Thus a simple logic can be arrived at as under. If all other things remain same, lower the amount borrowed, lower the interest, lower will be the profit and greater the amount borrowed, lower the interest, greater will be the profit

Financial leverage reflects the amount of debt used in the capital structure of the firm. Because debt carries a fixed obligation of interest payments, we have the opportunity to greatly magnify our results at various levels of operations.

The degree of financial leverage is computed as the percentage change in earnings available to common stockholders associated with a given percentage change in earnings before interest and taxes.

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

This calculation produces an index number which if, for example, it is 1.43, this means that a 100 percent increase in EBIT would result in a 143 percent increase in earnings per share. (It makes no difference mathematically if return is calculated on a per share basis or on total equity, as in the solution of the equation EPS cancels out.)

When the economic conditions are good and the company's Earnings before interest and tax is increasing, its EPS increases faster with debt in the capital structure.

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

DFL = % change in EPS / % change in EBIT

An alternate formula to calculate the degree of financial leverage is as follows:

DFL = EBIT / (EBIT – Int) = EBIT/PBT = 1 + INT/PBT

Financial leverage on the one hand increases shareholders' return and on the other, it also increases their risk. For a given level of EBIT, EPS varies more with more debt.

Thus financial leverage is a double edged weapon. It may assure you a higher return but with a higher risk. Normally, a trade off between the return and risk will be arrived at to determine the appropriate amount of debt.

Let us examine this with an example

A company's expected EBIT is Rs.150 with a standard deviation of Rs.50. This implies that the earnings could vary between Rs.100 and Rs.200 on an average.

Operating leverage, then, refers to the magnified effect on operating earnings (EBIT) of any given change in sales...And the more important, proportionally, are fixed costs in the total cost structure, the more marked is the effect on EBIT.

One of the most dramatic examples of operating leverage is in the airline industry, where a large portion of total costs are fixed

The higher the proportion of fixed costs to total costs the higher the operating leverage of the firm

Since a fixed expense is being compared to an amount which is a function of a fluctuating base (sales), profit-and-loss results will not bear a proportionate relationship to that base. These results in fact will be subject to magnification, the degree of which depends on the relative size of fixed costs vis-a-vis the potential range of sales volume. This entire subject is refered to as operating leverage.

Thus, in general terms, operating leverage refers to the use of fixed costs in the operation of a firm.

Operating leverage is defined as the percentage change in the earnings before interest and taxes relative to a given percentage change in sales.

The degree of operating leverage is also defined as the change in a company's earnings before interest and tax due to change in sales. Since variable costs change in direct proportion of sales and fixed costs remain constant, the variability in EBIT when sales change is caused by fixed costs.

Operating leverage refers to the use of fixed costs in the operation of a firm. A firm will not have operating leverage if its ratio of fixed costs to total

Degree of operating leverage = Sales revenue less total variable cost divided by sales revenue less total cost

Operating leverage can also be defined as the impact of a change in revenue on profit or cash flow. It arises, whenever a firm can increase its revenues without a proportionate increase in operating expenses. Cash allocated to increasing revenue, such as marketing and business development expenditures, are quickly consumed by high fixed expenses.

Positive operating leverage occurs at the point at which revenue exceeds the total amount of fixed costs.

Thus, the degree of operating leverage (DOL) is defined as the percentage change in the earnings before interest and taxes relative to a given percentage change in sales.

Thus, DOL = (% change in EBIT) / (% change in sales)

DOL = (changes in EBIT / EBIT) / (changes in sales / sales)

An alternate formula for calculating DOL is as follows

DOL = Contribution / EBIT = 1 + Fixed Cost / EBIT

Combined effect of operating and financial leverage

The combined effect of two leverages can be quite significant for the earnings available to ordinary shareholders. They cause wide fluctuation in earnings per share for a given change in sales.

If a company were to employ a high level of operating and financial leverage, even a very small change in the level of sales will cause significant effect on the earning per share.

Therefore, a question should arise - what should be the proportion of debt and equity in the capital structure of the company? This can be put in a different manner – what should be the financial leverage of the company?

The company should decide as to how to divide its cash flows into two broad components – a fixed component earmarked to meet the debt obligation and the balance portion that genuinely belongs to the equity shareholders.

Any financial management should ensure maximization of the shareholders' wealth. Therefore an important question that should be raised and answered is what is the relationship between capital structure and value of the firm? Or what is the relationship between capital structure and cost of capital?

As cost of capital and firm value are inversely related, this assumes greater importance. If the cost of capital is very low, then the value of the company is maximized and if the cost of capital is very high, then the value of the company is minimized.

Some question this relationship; according to them there is no relationship whatsoever between capital structure and value of the company. Others agree that the financial leverage has a positive impact and effect on the value of the firm up to a point and it would be negative thereafter. However some strongly hold the view that greater the financial leverage, greater the value of the firm, when other things remain equal.

Analysing alternate financial plans

Normally capital budgeting decisions are made for replacement of worn out or obsolete machineries. In case the machineries have not worn out but they have not contributing optimum production quantities, such replacement decisions may also be made.

Sometimes capital budgeting decisions are made for modernization of the plant and machinery. They are also made for replacing manually operated

The cost of capital decides the optimum capital structure and this will facilitate evaluating the value of the firm.

Capital structure planning

Companies which do not plan their capital structure may prosper in the short run as they develop as a result of financial decisions taken by the manager without any proper policy and planning. In these companies, the financing decisions are reactive and they evolve in response to the operating decisions.

But ultimately they face considerable difficulties in raising funds to finance their activities. With an unplanned capital structure, they will fail to economise use of funds. And this will impact the company's earning capacity considerably.

Our finance manager should be in a position to plan a suitable or optimum capital structure for a company. As we have seen, an optimum structure is one that can maximize the value of the firm in the market.

In practice the establishment of an optimum capital structure of a company is indeed a difficult one. It is different and varying among industries and among companies in the same industry. A number of elements and factors influence such a capital structure of a company.

These elements and factors are highly psychological, complex and qualitative and they do not always follow same pattern and theory. That is why, given the same company, different decision makers will decide differently on capital structure, as they will have different judgmental background.

Composition of capital structure

The following are some important components of a company's capital structure and they will therefore need proper analysis, consideration, evaluation and scrutiny

assessment of future interest rates and its earnings potential. Of course, the management will take into account hedging instruments available at its disposal for managing such interest rate exposures.

There are certain covenants in the loan documentation like what the company can do and cannot do. And these may inhibit the freedom of the management of the company. They normally cover payment of dividends, disposal of fixed assets, raising of fresh debt capital, etc. How these covenants prohibit and limit the company's future strategies including competitive positioning.

Selection of currency of the debt

The currency of the debt capital is yet another factor to reckon with. Now a days, a well run company can easily have access to international debt markets through external commercial borrowings.

Such recourse to international markets enables the company to globalize its operations. However, the most important consideration in the selection of the appropriate currency in which such international loans are granted and accepted is the exchange risk factor. Of course, the management can have access to foreign exchange hedging instruments like forward contracts, options, swaps, etc.

Profile and priority

The profile of the instruments used in the capital mix may differ from each other. Equity is the permanent capital. Under debt, there are short term instruments like commercial papers and long term instruments like term loans.

In the same manner the priorities of the instruments also differ. Repayment of equity will have the least priority when the company is winding up – either on its own or by legal force.

through cross currency swaps in the international markets. In this, the company which may be having competitive advantage in one currency and in one market can exchange the principal with another currency of its choice and in another market and with another corporate which has an exactly matching and opposite requirement. Such swaps are gaining popularity in the market place

Therefore the company and its management have to continuously innovate instruments and securities to reduce the final cost. An innovation once introduced may not attract new investors. There is also a possibility and the other companies may further fine tune the instruments and securities and make them more innovative and attractive.

Therefore financial innovation is a continuous process.

Various target groups in financial market

The different target groups in any financial market could be individual investor, institutional investors, private companies and corporates, public (government held or widely held) companies and corporates etc.

A company can raise its required capital from any of these or all of these segments.

A company can issue short term paper like commercial paper or certificate of deposits. It has also the option of raising the funds through public deposits.

How these various target groups can be accessed? What are their expectations and requirements? What are the target groups the company is proposing to approach for its requirements and why?

These are some of the immediate important questions a company may have to consider while deciding on the target group

Flexibility

First of all, the company should find out its debt capacity and the capital structure so determined should be within this debt capacity. And this capacity should not be exceed at any cost and at any time. As we know, the debt capacity depends on the company's ability to generate future cash flows. Only such cash flows can facilitate prompt repayment – principal and periodic interest payment – to the creditors. This cash flow also should leave some surplus to meet evolving emergent situations. Thus the capital structure should be flexible enough to facilitate it to change its structure with minimum cost and delay due to emerging situations.

Risk

The variability in the company's operations throw open many risks. They may arise due to the macroeconomic factors – industry and company specific – which may be beyond or within the company's scope. Any large dependence on debt will therefore magnify the possible variance in the company owners' earnings and at times may threaten the very existence or solvency of the company

Income

Any debt acquired by the company to build up appropriate capital structure should result in the value addition to the company owners and it should be advantageous by generating maximum returns to the company owners with minimum additional cost (by way of payment of interest and other charges)

Control

The preferred capital structure should not disturb the management control of the company. Therefore, beyond a certain level, the debt providers may insist for management control and this will be risky for the owners of the company. Hence closely held companies are particularly vulnerable and therefore concerned with the dilution of control

capital structure influences the value of the company. Some argue that financial leverage (use of debt capital) has a positive effect on the company value up to a point and negative thereafter. On the other extreme, few contend that there is no relation between capital structure and value of the company. Many strongly believe that other things being equal, greater the leverage, greater will be the value of the company

The capital structure of a company will be planned and implemented when the company is formed and incorporated. The initial capital structure would therefore be designed very carefully.

The management of a company would set a target capital structure and the subsequent financing decisions would be made with a view to achieve the target capital structure. The management has also to deal with an existing capital structure. The company will need to fund or finance its activities continuously. Every time a need arises for funds, the management will have to weigh the pros and cons of the various sources of finance and then select the advantageous source keeping in view the target capital structure.

Thus capital structure decisions are a continuous one and they have to be made whenever the company needs additional finance.

Now let us explore the relationship between the financial leverage and cost of capital which is a contested issue in financial management.

Assumptions

The relationship between a capital structure and cost of capital of a company can be better established and appreciated by considering the following assumptions

- There is no incidence of corporate / income / personal taxes
- The company distributes all its earnings in a year by way of dividends to its shareholders

The value of equity of any company can be found out by discounting its net income

V (value of equity) = E (net income) / K (cost of equity)

Similarly the value of a company's debt can be found out by discounting the value of interest on debt.

V (value of debt) = I (interest on debt) / K (cost of debt)

The value of the company will be the sum value of value of equity and value of debt.

The company's overall cost of capital is called the weighted average cost of capital (detailed coverage is given below) And this can be found as under

We know,

Value of the firm = value of its equity + value of its debt

Company's cost of capital = Net operating income / value of the firm

There is another way to calculate weighted average cost of capital.

WACC = Cost of equity X equity weight + cost of debt X debt weight

Net income approach reveals that the cost of debt R_d, the cost of equity R_e remain unchanged when Debt / Equity varies. The constancy of cost of debt and cost of equity with regard to D/E means that R_a, the average cost of capital is measured as under

$R_a = R_d [D / (D+E)] + R_e [E / (D+E)]$

The average cost of capital R_a will decrease as D/E increases.

Weighted average cost of capital

The weighted average cost of capital (WACC) is used in finance to measure a firm's cost of capital. It had been used by many firms in the past as a discount rate for financed projects, since using the cost of the financing seems like a logical price tag to put on it

different cost of equity y), then the formula would include an additional term for each additional source of capital

How it works

Since we are measuring expected cost of new capital, we should use the market values of the components, rather than their book values (which can be significantly different). In addition, other, more "exotic" sources of financing, such as convertible/callable bonds, convertible preferred stock, etc., would normally be included in the formula if they exist in any significant amounts - since the cost of those financing methods is usually different from the plain vanilla bonds and equity due to their extra features

Sources of information

How do we find out the values of the components in the formula for WACC? First let us note that the "weight" of a source of financing is simply the market value of that piece divided by the sum of the values of all the pieces. For example, the weight of common equity in the above formula would be determined as follows

Market value of common equity / (Market value of common equity + Market value of debt + Market value of preferred equity)

So, let us proceed in finding the market values of each source of financing (namely the debt, preferred stock, and common stock)

The market value for equity for a publicly traded company is simply the price per share multiplied by the number of shares outstanding, and tends to be the easiest component to find

The market value of the debt is easily found if the company has publicly traded bonds. Frequently, companies also have a significant amount of bank loans, whose market value is not easily found. However, since the market value of debt tends to be pretty close to the book value (for companies that have not

expenses are costs incurred during the operation and maintenance of the company. Net operating income or NOI is used in two very important ratios. It is an essential ingredient in the Capitalization Rate (Cap Rate) calculation. We would estimate the value of company like this

Estimated Value = Net Operating Income / Capitalization Rate

Another important ratio that is used is the Debt Coverage Ratio or DCR. The NOI is a key ingredient in this important ratio also. Lenders and investors use the debt coverage ratio to measure a company's ability to pay it's operating expenses. A debt coverage ratio of 1 is breakeven. From a bank's perspective and an investor's perspective, the larger the debt coverage ratio more the better. Debt coverage ratio is calculated like this

Debt Coverage Ratio = Net Operating Income / Debt Service

Debt service is the total of all interest and principal paid in a given year. The Net Operating Income is an important ingredient in several ratios which include the Capitalization Rate, Net Income Multiplier and the Debt Service Coverage Ratio

According to net operating income approach in the capital structure, the overall capitalization rate and the cost of debt remain constant for all degrees of financial leverage.

As we have seen under net income approach the average cost of capital is measured as under

$$R_a = R_d \ [D / (D+E)] + R_e \ [E / (D+E)]$$

R_a and R_d are constant for all degrees of leverage. Given this, the cost of equity can be ascertained as under:

$$R_e \ [E / (D+E)] = R_a - R_d \ [D / (D+E)]$$

- The cost of equity capital remains more or less constant or rises only gradually up to a certain degree of leverage and rises very sharply thereafter
- The average cost of capital, as a result of the above behaviour of cost of debt and cost of equity decreases up to a certain point, remains more or less unchanged for moderate increases in leverage thereafter and rises beyond a certain point

This traditional approach is not very clearly or sharply defined as the net income or net operating income approaches.

The main proposition of the traditional approach is that the cost of capital is dependent on the capital structure and there is an optimal capital structure which minimizes the cost of capital. At this optimal capital structure point the real marginal cost of debt and cost of equity will be the same. Before this optimal point, the real marginal cost of debt is less than the real marginal cost of equity and beyond the optimal point the real marginal cost of debt is more than the real marginal cost of equity

The traditional approach implies that investors value leveraged companies more than the un levered companies. This implies that they are prepared to pay a premium for the shares of such levered companies.

The contention of the traditional approach that any addition of debt in sound companies does not really increase the riskiness of the business and the shares of the company is not defendable.

Therefore there is no sufficient justification for the assumption that the investors' perception about risk of leverage will vary at different levels of leverage.

money B that firm L does. The eventual returns to either of these investments would be the same. Therefore the price of L must be the same as the price of U minus the money borrowed B, which is the value of L's debt

This discussion also clarifies the role of some of the theorem's assumptions. We have implicitly assumed that the capitalist's cost of borrowing money is the same as that of the firm, which need not be true under asymmetric information or in the absence of efficient markets

Proposition II

$$r_S = r_0 + \frac{B}{S}(r_0 - r_B)$$

r_S is the cost of equity

r_0 is the cost of capital for an all equity firm

r_B is the cost of debt

B / S is the debt-to-equity ratio

This proposition states that the cost of equity is a linear function of the firm´s debt to equity ratio. A higher debt-to-equity ratio leads to a higher required return on equity, because of the higher risk involved for equity-holders in a companies with debt. The formula is derived from the theory of weighted average cost of capital

These propositions are true assuming

-no taxes exist

-no transaction costs exist

-individuals and corporations borrow at the same rates

The same relationship as earlier described stating that the cost of equity rises with leverage, because the risk to equity rises, still holds. The formula however has implications for the difference with the WACC

Assumptions made in the propositions with taxes are

-Corporations are taxed at the rate T_C, on earnings after interest

-No transaction cost exist

-Individuals and corporations borrow at the same rate

Miller and Modigliani published a number of follow-up papers discussing some of these issues. The theorem first appeared in: F. Modigliani and M. Miller, "The Cost of Capital, Corporation Finance and the Theory of Investment," American Economic Review (June 1958)

Assumptions of Modigliani and Miller's proposition

Perfect capital market

Information is freely available and there is no problem of asymmetric information; transactions are costless; there are no bankruptcy costs; securities are infinitely divisible

Rational investors and managers

Investors rationally choose a combination of risk and return that is most advantageous to them. Managers act in the interest of the shareholders

Homogenous expectations

Investors hold uniform or identical expectations about future operating earnings

Equivalent risk classes

Companies can be easily classified and grouped into equivalent risk classes on the basis of their business risk

Taxes and capital structure

The tax provisions provide for deduction of interest paid on debt and therefore the debt capital can increase the company's after tax free cash flows. Therefore this interest shield increases the value of the company.

This tax advantage of debt implies that companies will employ more debt to reduce tax liabilities and increase value. In practice this is not always true as is evidenced from many empirical studies.

Companies also have non debt tax shields like depreciation, carry forward losses, etc. This implies that companies that have larger non debt tax shields would employ low debt as they may not have sufficient taxable profit to have the benefit of interest deductibility.

However, there is a link between non debt tax shields and the debt tax shields because companies with higher depreciation would tend to have higher fixed assets, which serve as collateral against debt.

Let us examine this with an example

Let us consider two companies each having operating income of Rs.100,000 and which are similar in all respects. However the degree of leverage employed by them differs. Company A employs no debt capital whereas Company B has Rs.400,000 in debt capital on which it pays 12 per cent interest.

The corporate tax rate applicable to both the companies is 30%. The income to the share holders of these two companies is shown in the table below

	Company A	Company B
Operating income	Rs.100,000	Rs.100,000
Interest on debt	--	Rs.48,000
Profit before tax	Rs.100,000	Rs.52,000
Taxes	Rs.30,000	Rs.15,600

- Hence there is a moderate tax advantage to debt if you can use the tax shields.

However, taxes cannot be the only factor because we do not see companies with 100% debt.

Capital structure determinants in practice

The capital structure determinants in practice may involve considerations in addition to the concerns about earning per share, value of the company and cash and funds flow.

A company may have enough debt servicing ability but it may not have assets to offer as collateral.

Management of companies may not willing to lose their grip over the control and hence they not be taking up debt capital even if they are in their best interest.

Some of the very important considerations are briefly covered below

Growth potential

Companies with growth opportunities may probably find debt financing very expensive in terms of interest to be paid and this may arise due to non availability of adequate unencumbered collateral securities. This may result in losing the investment opportunities.

High growth companies may prefer to take debts with lower maturities to keep interest rates down and to retain the financial flexibility since their performance can change unexpectedly at any point of time. They would also prefer unsecured debt to have flexibility.

Strong and mature companies have tangible assets and stable profits. Thus they may have low costs of financial distress. These companies would therefore raise debts with longer maturities as the interest rates will not be high for them and they have a lesser need of financial flexibility since their

Financial flexibility

Companies will normally have a low level of threat or insolvency perception even though their cash and funds flows are comfortable. Despite this, the companies may exercise conservative approach in their financial leverages since the future is very much uncertain and it may be difficult to consider all possible scenarios of adversity. It is therefore prudent for the companies to maintain financial flexibility as this will enable the companies to adjust to any change in the future events.

Loan agreements

The creditors providing the debt capital would insist for restrictive covenants in the long term loan agreements to protect their interest. Such covenants may include distribution of dividends, new additional external finances (other than equity issue) for existing or new projects, maintain working capital requirements at a particular level. These covenants may therefore restrict the companies' investment, financing and dividend policies. Violation of these covenants can lead to serious adverse consequences. To overcome these restrictive covenants, the companies may ask for and provide for early repayment provisions even with prepayment penalty provisions in the loan agreements.

Control

In designing a suitable capital structure, the management of the companies may decide and desire to continue control over the companies and this is true particularly in the case of first generation entrepreneurs. The existing management team not only wants control and ownership but also to manage the company without any outside interference. Widely held and closely held companies may opt to pursue appropriate strategies to hold back their existing management controls.

Internal – if the company can convince the shareholders to retain the earnings instead of distributing as dividends and if there is plenty of opportunity available for using such internal funds for profitable deployment. Virtually these retained earnings would be available to the company at nil cost.

3.Which source of external capital (debt or equity) is used more? Why?

Almost all the companies use both the forms of external capital – debt and equity. The equity is available at nil cost. If the company can leverage well, it can raise debt capital as well and if such debt carries lower interest rate when compared with the percentage earnings.

4. Are there any trends in corporate financing?

Capital structure in practice – debt capital and equity capital – is an evolving subject. Many of the successful companies have one form of financing pattern – either wholly using internal funds, or external equity. In case debt capital is sought for, the creditors would insist on adequate margin from the company itself by way of shareholder funds. Thus, depending upon the evolving situation, the modern companies meet their financing requirements either through retained earnings, or equity capital and if debt capital is sought for, with required equity capital arrangements.

5. If a firm issues new debt, what will happen to the firm's stock price? And if a firm issues new equity, what will happen to the firm's stock price?

Depends on what the firm will do with the money! Brealey & Myers' Fourth Law "You can make a lot more money by smart investment decisions than smart financing decisions." Brous' Sixth Law "Good investments are good and bad investments are bad, no matter how they are financed".

7. Does debt policy matter?

The valuation effect of changes in leverage is not obvious

We can't say that increases in debt will lead to increases in value, anymore than we can say that decreases in debt lead to decreases in value.

Since we observe firms having varying capital structures across industries but consistent capital structures within industries, then it appears debt does matter.

Debt exaggerates performance, good performance looks better but bad performance could become deadly.

To sum up…..

- The capital structure of a company reflects the debt capital – equity capital mix of the company
- All capital structure decisions of a company are very important from the point of view of shareholders' return and risk and hence the market value of the company
- Financial leverage in broader terms represents the use of external debt capital along with equity capital in the capital structure of a company
- Increasing the shareholders' return is the main reason for using financial leverage in capital structure of a company
- A company determines the financial advantages of financial leverage by calculating its impact on EPS or ROE
- If the company's overall profitability is more than current market interest rates, then EPS will increase with debt.
- With increasing EBIT, EPS increases faster with more debt
- The degree of financial leverage is the percentage change in EPS occurring due to a given percentage change in EBIT

moderate increases in leverage thereafter and rises beyond that at an increasing rate

- According Modigliani – Miller, a company's market value is not affected by its capital structure

Key words

Capital gearing
Capital structure
Combined leverage
Cost of debt
Cost of equity
Coverage ratio
Financial leverage
Financial risk
Information asymmetry
Interest tax shield
Net income approach
Net operating income approach
Operating leverage
Optimum cash structure
Risk return trade off
Weighted average cost of capital

Terminal questions

1. What do you understand by business risk and financial risk? What factors influence business risk?
2. A company should finance proactively and not reactively. Do you agree?

UNIT IV - DIVIDENT POLICIES

LESSON OUTLINE

What is dividend?
How do we define dividends?
Factors which influence dividend decisions
What is the form in which dividends are paid?
Dividend policies
Issues in dividend policy
Some important dates in dividend payments
Some Frequently Asked Questions
The Residual Theory of Dividends
Dividend Irrelevance
Signaling Hypothesis
Dividend Relevance:
Walter's Model
Gordon's model
Implications for Corporate Policy

LEARNING OBJECTIVES

After reading this lesson you should be able to

- Enlighten the objectives of dividend policy and understand, appreciate and highlight the relevance of the various issues in the dividend policy
- Recognise and understand the factors that influence the dividend policy
- Critically, significantly and decisively evaluate and get convinced as to why dividend policy matters
- Discuss the various background and conditions for paying current dividends
- Elucidate and explain the logic of irrelevance of dividends
- Identify and make out the market imperfections that make dividend policy relevant
- Focus and discuss the importance of stability of dividend policy, significance and repercussion of bonus shares, stock splits and share buybacks
- Explain the corporate behaviour of dividends

Rs.100,000 as a share holder and the company declares a return of say Rs.10,000 on this investment in a particular year, then the return is called the dividend on the investment made and the dividend pay out is 10%.

II. How do we define dividends?

Thus dividend is the distribution of value to shareholders, normally out of the profits made by the firm in a particular year. Of course, unlike interest payable on a deposit or a loan which is compulsory payment, dividend is not a compulsory yearly payment. Only if the company makes a profit decides to distribute such profits, declare dividends, the share holders will get a return.

III. Factors which influence dividend decisions

1. Legal constraints:

Normally all countries prohibit companies from paying out as cash dividends any portion of the firm's legal capital, which is measured by the par value of equity shares (common stock) Other countries define legal capital to include not only the par value of the equity shares (common stock), but also premium paid if any (any-paid in – capital in excess of par).

These capital impairment restrictions are generally established to provide a sufficient equity base to protect creditor's claims.
We shall examine an example to clarify the differing definitions of capital:

Company XYZ Limited's financial highlights as revealed from its latest balance sheet are as follows:

Equity share at par 1,00,000
Premium paid over par value (Paid-in capital in excess of par) 2,00,000

insolvency. The violation of a contractual constraint is generally grounds for a demand of immediate payment by the funds supplier.

3. Internal constraints:

The firm's ability to pay cash dividends is generally constrained by the amount of excess cash available rather than the level of retained earnings against which to charge them. Although it is possible for a firm to borrow funds to pay dividends, lenders are generally reluctant to make such loans because they produce no tangible or operating benefits that will help the firm repay the loan. Although the firm may have high earnings, its ability to pay dividends may be constrained by a low level of liquid assets. (Cash and marketable securities)

We will take the previous example to explain this point. In our example, the firm can pay Rs.1,40,000 in dividends. Suppose that the firm has total liquid assets of Rs.50,000 (Rs.20,000 cash +marketable securities worth Rs.30,000) and Rs.35,000 of this is needed for operations, the maximum cash dividend the firm can pay is 15,000 (Rs.50,000 – Rs.35,000)

4. Growth prospects:

The firm's financial requirements are directly related to the anticipated degree of asset expansion. If the firm is in a growth stage, it may need all its funds to finance capital expenditures. Firms exhibiting little or no growth may never need replace or renew assets. A growth firm is likely to have to depend heavily on internal financing through retained earnings instead of distributing current income as dividends

that the firm is in good in health. On the other side, if the firm skips in paying dividend due to any reason, the shareholders are likely to interpret this as a negative signal.

7. Taxation

The firm's earnings are taxable in many countries. This taxation is applied differently in different countries. One can group these different taxation practices as under:

Single taxation

The firm's earnings are taxed only once at the corporate level. Share holders whether they are individuals or other firms do not pay taxes on the dividend income. They are exempt from tax. However the shareholders both individuals and other firms are liable for capital gains tax. India currently follows this single taxation. Under this, the firms in India pay 35% tax on their earnings and they will have to pay additional tax at 12.5% on the after tax profits distributed as dividends to the shareholders. The experience shows that after the implementation of this single taxation, Indian firms have started sharing a sizeable portion of their earnings with their shareholders as dividends

Double taxation

Under this, the shareholders' earnings are taxed two times: first the firms' profit earnings are taxed as corporate tax and then the shareholders' dividend earnings out of the after tax profits are taxed as dividend tax.

and the firm may decide to declare extra cash dividend over and above the normal dividends.

3. Special cash dividend – similar to extra dividend, but definitely won't be repeated. Some companies have declared such special dividends on the occasion of their silver or golden jubilee.

4. Liquidating dividend – some or all of the business has been sold. This will be a payout in lieu of the original investment made by the shareholders in case the firm is voluntarily decides to close its operation or if it is compelled by stakeholders other than equity shareholders. Such liquidating dividend may be paid in one lump sum or in stages, depending on the recovery of the free assets of the firm in stages.

2.Share Dividends:

Instead of declaring cash dividends, the firm may decide to issue additional shares of stock free of payment to the shareholders. In this, the firm's number of outstanding shares would be increasing. In the case of cash dividends, the firm may not be able to recycle such earnings in its business. However, in the case of these stock dividends, such earnings are retained in the business. By this, the shareholders can expect to get increased earnings in the future years. This stock dividend is popularly known as bonus issue of shares in India. If such bonus issues are in the range or ratio up to 1:5 (a maximum of 20%), i.e. one share for every five shares held, it is treated as small stock dividend. In case the stock dividend exceeds 20%, then it is called large stock dividend.

Let us examine this with an example

dividend. From the firm's perspective, the change in the balance sheet will be different. A three-for-two stock split, for example, corresponds to a 50% stock dividend. A 10% stock dividend is then equivalent to a eleven-for-ten stock split.

If the initial balance sheet was

Common stock (100,000 shares) 1000,000
Retained Earnings 800,000
Total Equity 1,800,000

With an 11-for-10 stock split, the new balance sheet would be

Common stock (110,000 shares) 1000,000
Retained Earnings 800,000
Total Equity 1,800,000

Share dividend Vs Share split

Share dividend	Share split
The balance in paid up capital and share premium accounts go up.	The balance in paid up capital and share premium accounts does not change
The balance in reserves and surplus account decreases due to transfer to the paid up capital and share premium account1111	The balance in reserves and surplus account does not under go any change.
The par value per share remains unaffected	The par value per share changes – it goes down.

However, in both cases – share dividend and share split – the total value of the shareholders' funds remains unaffected.

4. Share repurchase

Share repurchase is also otherwise known as repurchase of its own shares by a firm. Only recently the share repurchase by firms in India was permitted under

Price stability

Share prices tend to fluctuate a great deal in response to changing market conditions and periodic boom and bust conditions. If a company were to repurchase its shares when the market price looks depressed to the management, the repurchase action of the management tends to have a buoying effect in the bearish market.

Tax advantage

Such repurchases result in capital gains for the investors and these capital gains are taxed at a lower rate when compared with dividend distribution

Management control

The share repurchases can be used as an instrument to increase the insider control in the companies. Normally insiders do not tender their shares when a company decides to share repurchase. They end up holding a larger proportion of the reduced equity of the company and thereby have greater control

Advantages:

Repurchase announcements are viewed as positive signals by investors. Stockholders have a choice when a firm repurchases stocks: They can sell or not sell. Dividends are sticky in the short-run because reducing them may negatively affect the stock price. Extra cash may then be distributed through stock repurchases.

1. Pay out ratio

It is defined as dividend as a percentage of earnings. It is an important concept in the dividend policy. A firm may decide to distribute almost its entire earnings. Another firm may decide to distribute only a portion of its earnings. Initially it may appear, the former firm declares maximum dividends. However in the long run, the latter firm which declares only a portion of its earnings may overtake our former high pay out firm.

Let us now look at this with an example.

Firms X and Y have equity capital of Rs.100. Let us assume both the firms generate 25% earnings every year. Let us assume that Firm X declares 50% dividend every year and firm Y declares only 25% dividend every year.

Firm / Year	Equity	25% earnings	Dividend	Retained Earnings
Firm X				
1	100	25	12.50	12.50
2	112.50	28.12	14.06	14.06
3	126.56	31.64	15.82	15.82
4	142.38	35.59	17.79	17.79
5	160.17	40.04	20.02	20.02
6	180.19	45.04	22.52	22.52
7	202.71	50.67	25.33	25.33
8	228.04	57.01	28.50	28.50
9	256.54	64.13	32.06	32.06
10	288.60	72.15	36.07	36.07
11	324.67	81.16	40.58	40.58
12	365.25	91.31	45.65	45.65
13	410.90	102.72	51.36	51.36
14	462.26	115.56	57.78	57.78

If you look at the market value, a low pay out firm will result in a higher share price in the market because it increases earnings growth.

Uncertainty surrounding future company profitability leads certain investors to prefer the certainty of current dividends. Investors prefer “large” dividends. Investors do not like to manufacture “homemade” dividends, but prefer the company to distribute them directly.

Capital gains taxes are deferred until the actual sale of stock. This creates a timing option. Capital gains are preferred to dividends, everything else equal. Thus, high dividend yielding stocks should sell at a discount to generate a higher before-tax rate of return. Certain institutional investors pay no tax.

Dividends are taxed more heavily than capital gains, so before-tax returns should be higher for high dividend - paying firms. Empirical results are mixed -- recently the evidence is largely consistent with dividend neutrality.

2. Retention ratio

If x is pay out ratio, then the retention ratio is 100 minus x. That is retention ratio is just the reverse of the pay out ratio. As we have seen above, a low pay out (and hence a high retention) policy will produce a possible higher dividend announcement (and thereby higher share price in the secondary market leading to huge capital gains) because it increases earnings growth.

3. Capital gains

Investors of growth companies will realize their return mostly in the form of capital gains. Normally such growth companies will have increasing earnings

This occurs two business days before date of record. If one were to buy stock or share on or after this date, he or she will not eligible to receive the dividend. Hence naturally the stock or share price generally drops by about the amount of the dividend on or after this date. Therefore the convention is that the right to the dividend remains with the stock until two business days before the holder-of-record date. Whoever buys the stock on or after the ex-dividend date does not receive the dividend.

4. Date of Payment

This is the date on which the dividend payment cheques are made out and mailed. Since many firms follow the electronic clearing system for crediting the dividends to the shareholders' accounts, the date of payment is the date on which such ECS instructions are issued to the banks. In this ECS method of payment, there is no paper work involved – cheques need not be made out mailed and mailed – enormous savings in expenditure in the cheque book costs and also in the dispatch.

Let us examine these different dates with an example:

Suppose our firm XYZ Limited announces on 10th June 2005 that it would pay a dividend of 20% to all their shareholders on record at close of business on June 30th 2004.

The declaration date is 10th June 2005
The record date is 30th June 2005
Ex dividend date is 28th June 2005
(while reckoning the ex dividend date all Saturdays, Sundays and other holidays – the days the stock exchange does not work – should be excluded)

What if the firm does not pay dividend?

In case the firm does not declare or pay any dividend, then the earnings would be accumulated under reserves and surpluses. And they would be invested in the business again. And we know that the retained earnings are comparatively cheaper and cumbersome. Only these retained earnings generate capital gains for the shareholders.

Thus, either decision – to pay dividends or retain earnings - will affect the value of the firm.

What are therefore the most crucial issues for a firm in paying dividends?

1. High or low payout?

2. How frequent?

3. Do we announce the policy?

4. Amount in near future & long term

5. Stable or irregular dividends?

The most important aspect of dividend policy is to determine the amount of earnings to be distributed to shareholders and the amount to be retained in the firm with an objective to maximise shareholder's return.

We can say that a higher payout policy means more current dividends & less retained earnings, which may consequently result in slower growth and perhaps lower market price/ share. On the other hand, low payout policy means less current dividends, more retained earnings & higher capital gains and perhaps higher market price per share.

Capital gains are future earnings while dividends are current earnings.

earnings. According to them "the capital markets are overwhelmingly in favour of liberal dividends as against conservative or too low dividends'

The following valuation model worked out by them clearly confirms the above view

P = M (d + e / 3)

Where, P = market price per share, D = dividend per share, E = earnings per share, M = a multiplier

According to this, in the valuation of share the weight attached to dividends is equal to four times the weight attached to retained earnings. This is made clear in the following modified model – in this E is replaced by D+R

P = M [d + (d +r/ 3)]

R = retained earnings

The weights provided by Graham and Dodd are based on their estimation and this is not derived objectively through empirical analysis. Not with standing this observation, the major thrust of the traditional theory is that liberal pay out policy has a favourable impact on stock price

The Residual Theory of Dividends

One of the schools of thought, the residual theory, suggests that the dividend paid by a firm is viewed as a residual, i.e. the amount remaining or leftover after all acceptable investment opportunities have been considered and undertaken.

In this approach, the dividend decision is done in stages as under:

To satisfy shareholders' taste for stable dividends, firms should

1. Estimate earnings and investment opportunities, on average over the next five to ten years;

2. Use this information to find out the average residual payout ratio;

3. Set a target payout ratio.

Dividend Irrelevance

A firm operating in a perfect or ideal capital market conditions, may many times face the following dilemmas with regard to payment of dividends

- The firm has sufficient cash to pay dividends but such payments may erode its cash balance
- The firm does not have enough cash to pay dividends and to meet its dividend payment needs, the firm may have to issue to new shares
- The firm does not pay dividends, but shareholders expect and need cash

In the first case, when the firm pays dividends, shareholders get cash in their hands but the firm's cash balance gets reduced. Though the shareholders gain in the form of such dividends, they lose in the form of their claims on the cash assets of the firm. This can be viewed as a transfer of wealth of the shareholder from one portfolio to another. Thus there is no net gain or loss. In a perfect market condition, this will not affect the value of the firm.

In the second one, the issue of new shares to finance dividend payments results in two transactions – existing share holders gets cash in the form of dividends and the new shareholders part with their cash to the company in exchange for new shares. The existing shareholders suffer an equal amount of capital loss since the value of their claim on firm's assets gets reduced. The new

- floatation costs are nil and negligible
- there are no taxes
- investment opportunities and future profits of firms are known and can be found out with certainty – subsequently Miller and Modigliani have dropped this presumption
- investment and dividend decisions are independent

Thus, the MM hypothesis reveals that under a perfect market conditions, the dividend policies of a firm are irrelevant, as they do not affect the value and worth of the firm. It further unfolds that the value of the firm depends on its earnings and they result from its investment policy. Therefore, the dividend decision of the firm – whether to declare dividend or not, whether to distribute the earnings towards dividends or retained earnings – does not affect the investment decision.

M&M contend that the effect of dividend payments on shareholder wealth is exactly offset by other means of financing. The dividend plus the "new" stock price after dilution exactly equals the stock price prior to the dividend distribution.

M&M and the total-value principle ensures that the sum of market value plus current dividends of two firms identical in all respects other than dividend-payout ratios will be the same. Investors can "create" any dividend policy they desire by selling shares when the dividend payout is too low or buying shares when the dividend payout is excessive

they wish to enjoy more current income. Such investors would naturally prefer and value more a higher dividend pay out. Some investors may be hesitant to buy shares in a fluctuating market if they wish to get a less current income and therefore they may value more a lower dividend pay out.

Additional equity at a lower price

Miller and Modigliani assume that a company can sell additional equity at the current market price. However, companies following the advice and suggestions of investment bankers or merchant bankers offer additional equity at a price lower than the current market price. This under pricing practice mostly stems out of market compulsions.

Issue costs

Miller and Modigliani assumption is based on the basis that retained earnings or dividend payouts can be replaced by external financing. This is possible when there is no issue cost. In the real word where issue costs are very high, the amount of external financing has to be greater than the amount of dividend retained or paid. Due to this, when other things are equal, it is advantageous to retain earnings rather than pay dividends and resort to external finance.

Transaction costs

In the absence of transaction costs, dividends and capital gains are equal. In such a situation if a shareholder desires higher current income than the dividends received, he can sell a portion of his capital equal in value to the additional current income required. Likewise, if he wishes to enjoy lesser current income than the dividends paid, he can buy additional shares equal in value to the difference between dividends received and the current income desired.

Dividend Relevance:

Bird-in-the-Hand Argument

Myron Gordon and John Lintner have argued that shareholders are generally risk averse and prefers a dividend today to the promise of the greater dividend in the future. Hence shareholder's required return is affected by a change in the dividend policy: Reducing today's dividend to invest in the firm at the initial required rate of return destroys value if shareholders' required rate of return increases due to this decision.

Walter's Model

Prof. James E. Walter argues that the choice of dividend policies almost always affect the value of the firm. His model is based on the following assumptions:

1. **Internal financing**: The firm finances all investment through retained earnings; i.e. debt or new equity is not issued.

2. **Constant return and cost of capital:** the firm's rate of return, r , and its cost of capital, k , are constant.

3. **100% payout or retention:** All earnings are either distributed as dividends or reinvested internally immediately**.**

4. **Infinite time:** the firm has infinite life

Valuation Formula: Based on the above assumptions, Walter put forward the following formula:
P = DIV/k + [(EPS-DIV) r/k]/k, where

P = market price per share
DIV= dividend per share
EPS = earnings per share
DIV-EPS= retained earnings per share
r = firm's average rate of return
k= firm's cost o capital or capitalisation rate

unlimited surplus generating investment opportunities, yielding higher returns than the cost of the capital. Once they exhaust all portfolios of super profitable opportunities, they earn just a return equal to the cost of capital on their investments. Here the dividend policy has no impact on the market value per share.

• When the rate of return is lesser than the cost of capital (r< k), the price per share increases as the dividend payout ratio increases.

Such firms are viewed as declining firms in the market place. They do not have any profitable portfolio of investment opportunities to invest their earnings. These firms would only earn on their investments a rate of return less than the minimum rate required by the investors and that can be obtained elsewhere in the normal circumstances.

Investors in such declining firms would require earnings distributed to them so that they can either spend it or invest elsewhere to get a higher rate of return. The market value of such declining firms will be high only when it does not retain any earnings at all.

Thus in a nut shell,

• The optimum payout ratio for a growth firm (r > k) is nil.

• The optimum payout ratio for a normal firm (r = k) is irrelevant

• The optimum payout ratio for a declining firm (r< k) is 100%

The dividend policy of a firm depends on the availability of investment opportunities and the relationship between the firm's internal rate of return and its cost of capital.

Let us now try some problems to make the concept clearer.

Example

The following information is available for ABC Ltd. Earnings per share : Rs. 4 Rate of return on investments : 18 percent Rate of return required by shareholders : 15 percent What will be the price per share as per the Walter model if the payout ratio is 40 percent? 50 percent? 60 percent?

Solution.

According to the Walter model, P = [D + (E – D) r/k] / k

Given E = Rs4, r = 0, and k = 0.15, the value of P for the three different payout ratios is as follow:

Payout ratio P

40 percent = [1.6 + (2.40) 0.18/0.15] / 0.15 = Rs.29.87

50 percent = [2.00 + (2.00) 0.18/0.15] / 0.15 = Rs29.33

60 percent = [2.40 + (1.60) 0.18/0.15] / 0.15 = Rs28.80

Gordon's model and its relevance

Gordon, Myron, J's model explicitly relates the market value of the firm to its dividend policy. It is based on the following hypotheses

An all equity firm

A firm is an all equity firm and it has no debt.

the following formula:

$P_0 = EPS_1 (1 – b) / (k – b)$

P_0 = market price per share
EPS_1 = expected earnings per share
b = retention ratio
r = firm's internal profitability
k= firm's cost of capital or capitalisation rate

Example

The following information is available for ABC Company. Earnings par share : Rs.5.00 Rate of return required by shareholders : 16 percent. Assuming that the Gorden valuation model holds, what rate of return should be earned on investments to ensure that the market price is Rs.50 when the dividend payout is 40 percent?

Solution

According to the Gordon model $P_0 = EPS_1 (1 – b) / (k – b)$

Substituting in this equation, the various values given, we get
50 = 5.0(1- 0.06) / (0.16 – 0.6r)
Solving this for r, we get
R = 0.20 = 20 percent

Hence, ABC Company must earn a rate of return of 20 percent on its investments.

Implications for Corporate Policy

Establish a policy that will maximize shareholder wealth.
Distribute excess funds to shareholders and stabilize the absolute amount of dividends if necessary (passive).

Payouts greater than excess funds should occur only in an environment that has a net preference for dividends.

Also, taxes on capital gains are paid only when the stock is sold, which means that they can be deferred indefinitely.

Clientele Effect

Different groups (clienteles) of stockholders prefer different dividend policies. This may be due to the tax treatment of dividends or because some investors are seeking cash income while others want growth. Changing the dividend policy may force some stockholders to sell their shares.

Market practice

The market practices with regard to dividend declaration or policy are:

- They maintain their dividend rate as it is preferred by the shareholders and the government
- When earnings permit, they declare good dividends. They don't have a policy to accumulate surplus and declare bonus share.
- The main stake holder does not insist on any preferred dividend rate. It is entirely decided the company and its management
- Dividend declaration is governed by commercial considerations and at times companies tend to exhibit conservative approach
- Companies reward shareholders generously – both in dividends and bonus shares. They practice very high pay out
- Sometimes companies skip dividend when performance is poor or liquidity is poor to maintain financial strength
- Companies maintain a fixed rate of dividend and issue bonus shares when it is possible. The purpose is to ensure that the shareholders retain shares to enjoy capital gains
- Some companies decide on the fair return to investors and maintain their dividend at these levels
- Companies declare as high a dividend as they can. This will result in share price increase. The companies will then be in a position to raise more funds in the capital markets either by going in for fresh capital issue
- Companies declare a consistent and reasonable return to the shareholders; this will enable them to plough back profits to take care of contingencies and to improve their capital base

i. companies decide each year's dividend by looking at their capital expenditure requirements and then distributing whatever cash is left over
ii. most companies have some idea of a target dividend distribution percentage
iii. they set each year's dividend equal to the target pay out ratio times that year's earnings
iv. managers and investors seem more concerned when earnings are unexpectedly high for a year or two
v. companies undertake substantial share repurchases usually finance them with an offsetting reduction in cash dividends

3.Answer the following question twice, once assuming current tax law and once assuming the same rate of tax on dividends and capital gains.

Suppose all investments offered the same expected return before tax. Consider two equally risk shares ABC Ltd and XYZ Ltd. ABC Ltd pay a generous dividend and offer low expected capital gains. XYZ Ltd pay low dividends and offer high expected capital gains. Which of the following investors would prefer the XYZ Ltd? What would prefer ABC Ltd? Which should not care? (Assume that any stock purchased will be sold after one year)

i. pension fund
ii. an individual
iii. a corporation
iv. a charitable endowment
v. a security dealer

To sum up…..

- Dividends are earnings distributed to its share holders by a company
- The (distribution) dividends expressed in percentage terms is called pay out ratio
- Retention ratio is there fore 1 minus pay out ratio

high tax brackets prefer high retention so that the share values could so high to assure them capital gains. Normally capital gains are taxed lower when compared with cash dividends

- In countries like India, the investors are not taxed for the dividends received by them. However capital gains are taxed for them. Hence there is a possibility that the Indian investor may prefer dividend distribution
- This reveals no clear picture or any consensus – whether dividend matters or not.
- Therefore a number of factors will have to taken into account before deciding about the dividend policy
- Dividend can be distributed in cash or share form. Share form dividend is called bonus share.
- Bonus share has a psychological appeal. They do not increase the value of the share. Stock splits have the same effect as the bonus shares
- Companies prefer to distribute cash dividends.
- They prefer to finance their expansion and growth through issue of new shares and / or borrowing.
- This is based on the assumption that shareholders and entitled to and they prefer period return on their investment
- Many companies move over to long term pay out ratios systematically planning and working for it.
- While working out the dividends they consider past distribution and also current and future earnings. Thus dividends have information contents
- Companies would like to reward their shareholders through a stable dividend policy for reasons of certainty
- Stable dividend policy does not mean and result in constant pay out ratio. In this regard stable policy means predictable policy

Terminal questions

1.What are the implications of Gordon's basic model?

2.State Walter's model. How is it derived?

3.What are the implications of Walter model?

4.Briefly derive Millar and Modigliani's dividend irrelevance theorem

5.What are the critics view of Miller and Modigliani hypothesis?

6.A low dividend paying company keeps the shareholders' long term interest in mind. This is mainly because the tax application on dividend income is unfavourable when compared with tax application on capital gains. Do you agree with this view? Briefly discuss the issues involved

7.Investors have a strong preference for dividends. Do you agree?

8.What are the factors relevant for determining the pay out ratio? Briefly discuss each of them

9.Discuss the important provisions of company laws in India pertaining to dividends

10.What are the motives for declaring

- bonus shares
- share splits
- share repurchases

11.Which types of companies would you expect to distribute a relatively high or low proportion of current earnings?

- high risk companies
- companies that have experienced an unexpected decline in profits
- companies that expect to experience a decline in profits
- growth companies with valuable future investment opportunities

UNIT - V

WORKING CAPITAL MANAGEMENT

Meaning, concepts, types and Significance of working capital

LESSON OUTLINE

- Working capital management
- Current assets and Current liabilities
- Fixed assets vs. current assets
- Gross concepts and Net concepts of Working Capital
- Permanent Working Capital and Temporary Working Capital
- Determinants of Working Capital
- Working capital under inflation
- Negative working capital

LEARNING OBJECTIVES

After reading this lesson you should be able to

- Understand different concepts used in the Working Capital Management and suit the best for the creditors.
- Identify different components used for calculation of Current assets and Current Liabilities.
- Know preliminary steps to be considered for determining working capital requirements.

lead to business failure. Many profitable companies fail because their management team fails to manage the working capital properly. They may be profitable, but they are not able to pay the bills. Therefore management of working capital is not very easy and the financial manager takes very important role in it. Hence, the following guidelines regarding concepts, components, types and determinants will be very useful to a financial manager.

Concepts of Working Capital:

There are two concepts of working capital namely gross concepts and net concepts:

Gross Working Capital:

According to this concept, whatever funds are invested are only in the current assets. This concept expresses that working capital is an aggregate of current assets. The amount of current liabilities is not deducted from the total current assets. This concept is also referred to as "Current Capital" or "Circulating Capital".

Net Working Capital:

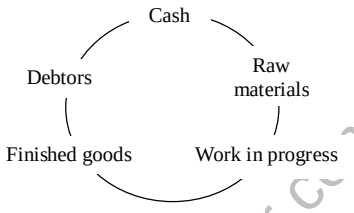
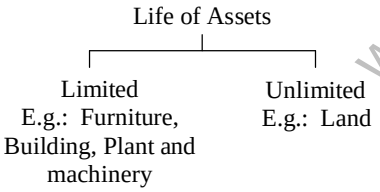
What is net working capital? The term net working capital can be defined in two ways: (1) The most common definition of net working capital is the capital required for running day-to-day operations of a business. It may be expressed as excess of current assets over current liabilities. 2) Net working capital can alternatively be defined as a part of the current assets, which are financed with long-term funds. For example, if the current assets is Rs. 100 and current liabilities is Rs. 75, then it implies Rs. 25 worth of current assets is financed by long-term funds such as capital, reserves and surplus, term loans, debentures, etc. On the other hand, if the current liability is Rs. 100 and current assets is Rs. 75, then it implies Rs. 25 worth of short-terms funds is used for investing in the fixed assets. This is known as negative working capital situation. This is not a

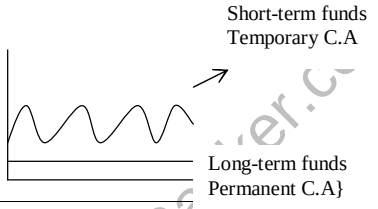
by both long-term sources and short-term sources of funds. Long-term funds → Current Assets Short-term funds → E.g. Long-term sources: Share capital, Debentures Term loans. Short-term sources: Bank O.D., Cash Credit, Sundry creditors etc.,	E.g. Share capital, Debtors, term loans.
4. Sign Convention Gross concept of working capital is always a positive figure. It never comes as a negative figure. In other words, without current assets a company cannot run. Hence, gross concept is nothing but the sum of all current assets.	Net working capital maybe positive or negative. Positive figure gives the company's positive attitude. Negative figure gives the company's poor financial position. **Positive:** Current Assets > Current Liabilities **Negative:** Current Liabilities > Current Assets
5. Nature of Information It emphasizes only on quantitative nature. It never discloses the liquidity positions. Gross working capital concept results in mismanagement of current assets.	The net working capital concept emphasizes on both the quantitative as well as qualitative nature, which are more relevant for managerial decision-making. Current Ratio = Current Assets / Current Liabilities Liquidity ratio = Liquid Assets / Current Liabilities

What are Current Assets?

Assets, which can normally be converted into cash with in a year or within the operating cycle, are grouped as current assets. In other words, current assets are resources that are in cash or will soon be converted into cash in 'the ordinary course of business'. The current asset components are assets like cash, temporary investments, raw materials, work in progress, accounts receivables (sundry debtors/ trade receivables/ bills receivables) and prepaid expenses.

Table: 1.3 Difference between fixed assets and current assets

FIXED ASSETS	CURRENT ASSETS
1. Significance: Any resources that can be used to generate revenue are called fixed assets. They are acquired for the purpose of increasing the revenues and not for resale. Eg. Land, building, plant and machinery, furniture, fixtures, etc.	Any asset that is convertible or realizable into cash within a year or one manufacturing cycle, whichever is high, is called current assets.  **Manufacturing cycle**
2. Nature: These assets are permanent in nature. Life of these assets is usually more than one year.  	In contrast to fixed assets, the current assets are short-term in nature. The life of the assets are usually less than one year.

6. Components These assets may be tangible or intangible. Tangible assets have physical existence and generate goods and services (Land, building, plant and machinery furniture). They are used for the production of goods and services. They are shown in the Balance sheet in accordance with the cost concept. An asset, which cannot be seen with our naked eye and does not have any physical existence, is called an intangible assets, goodwill, patents, trade mark etc. Patents leads to invention, copy writes lead to scale of literacy and trade mark represents use of certain symbols.	Current assets are always tangible. But for the management purpose these assets are divided into permanent current assets, and fluctuating current assets and liquid assets. Permanent current asset are financed by long-term sources. Fluctuating current asset are financed by short-term sources. Liquid assets refer to current assets which can be converted into cash immediately or at a short notice without diminution of value. 

has referred to this type of working capital as 'Core current assets' or 'Hard-core working capital'.

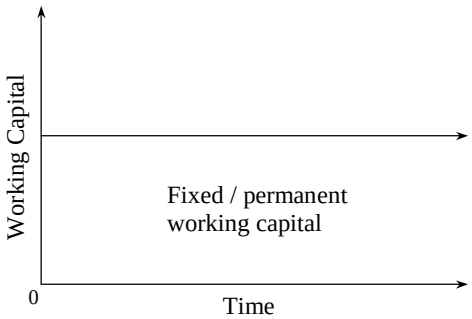


Fig 1.1: Fixed working capital

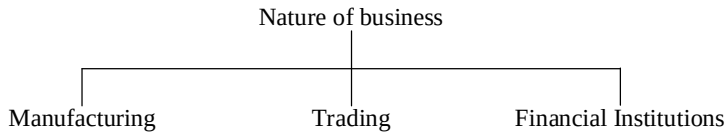
remainina constant over time

The need for investment in current assets may increase or decrease over a period of time according to the level of production. Some amount of permanent working capital remains in the business in one form or another. This is particularly important from the point of view of financing. Tandon Committee has pointed out that this type of core current assets should be financed through long-term sources like capital, reserves and surplus, preference share capital, term loans, debentures, etc.

Leader in two-wheelers Hero Honda Ltd. and in four-wheelers Maruthi Udyog Ltd. keeping their model in each type in their showrooms are typical examples of permanent working capital.

too low, it will have liquidity problems. The total working capital requirements is determined by a wide variety of factors. They also vary from time to time. Among the various factors, the following are necessary.

1. Nature of business:



The working capital requirements of an organization are basically influenced by the nature of its business. The trading and financial institutions require more working capital rather than fixed assets because these firms usually keep more varieties of stock to satisfy the varied demands of their customers. The public utility service organisations require more fixed assets rather than working capital because they have cash sales only and they supply only services and not products. Thus, the amounts tied up with stock and debtors are almost nil. Generally, manufacturing business needs, more fixed assets rather than working capital. Further, the working capital requirements also depend on the seasonal products.

2. Size of the business: Another important factor is the size of the business. Size of the business means scale of operation. If the operation is on a large scale, it will need more working capital than a firm that has a small-scale operation.

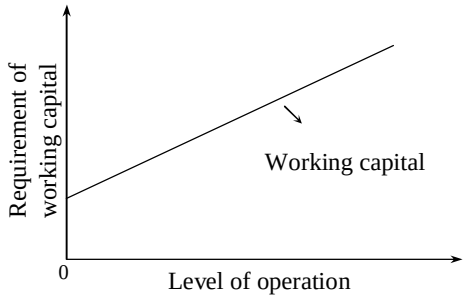


Fig 1.3:Increasing operation

4. Production policy: The requirements of working capital are also determined by production policy. When the demand for the product is seasonal, inventory must be accumulated during the off-season period and this leads to more cost and risks. These firms, which manufacture variety of goods, will have advantages of keeping low working capital by adjusting the production according to season.

5. Turnover of Working capital: The speed of working capital is also influenced by the requirements of working capital. If the turnover is high, the requirement of working capital is low and vice versa.

$$\text{Working Capital Turnover} = \frac{\text{Cost of goods sold}}{\text{Working capital}}$$

6. Credit Terms: The level of working capital is also determined by credit terms, which is granted to customers as well as available from its creditors. More credit period allowed to debtors will result in high book debts, which leads to high working capital and more bad debts. On the other hand liberal credit terms available from creditors will lead to less working capital.

7. Growth and Expansion: As a company grows and expands logically, it requires a larger amount of working capital. Other things remaining same, growing industries need more working capital than those that are static.

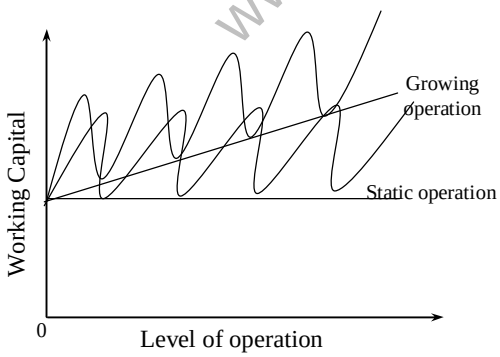


Fig 1.5: Level of working capital for different operations

Significance of working capital:

The basic objective of financial management is to maximize the shareholders' wealth. This is possible only when the company increases the profit. Higher profits are possible only by way of increasing sales. However sales does not convert into cash instantaneously. So some amount of funds are required to meet the time gap arrangement in order to sustain the sales activity, which is known as working capital. In case adequate working capital is not available for this period, the company will not be in a position to sustain stocks as it is not in a position to purchase raw materials, pay wages and other expenses required for manufacturing goods to be sold. Working capital, thus, is a life-blood of a business. As a matter of fact, any organization, whether profit oriented or otherwise, will not be able to carry on day-to-day activities without adequate working capital.

Problems of inadequate working capital:

Proper management of working capital is very important for the success of an enterprise. It should be neither large nor small, but at the optimum level. In case of inadequate working capital, a business may suffer the following problems.

1. **Purchase of raw materials:** Availing the cash discount from the suppliers (creditors) or on favourable credit terms may not be available from creditors due to shortage of funds. For eg. This situation arises when the suppliers supply the goods on two months credit allowing 5% cash discount, if it is payable within the 30 days.

In the above situation, if a person buys material for Rs. 10,000 by availing the cash discount, he has to pay only Rs 9500 [10,000 – 500]. This is possible only with the help of adequate working capital.

of fixed assets. Moreover, inadequate cash and bank balances will curtail production facilities. Consequently, it leads to low fixed assets turnover ratio. E.g. Cost of goods sold is Rs 2,40,000 fixed assets is Rs 60,000 and average industrial fixed assets turnover ratio is 10 times.

$$\text{Fixed assets turnover ratio} = \frac{\text{Cost of sales}}{\text{Fixed assets}} = \frac{2,40,000}{60,000} = 4 \text{ times}$$

When industrial average ratio is 10 times and the actual turnover ratio is 4 times, it is understood that the fixed assets are not utilized to the maximum.

6. Higher interest: In order to account for the emergency working capital fund, the company has to pay higher rate of interest for arranging either short-term or long-term loans.

7. Low Return on Investment (ROI): Inadequate working capital will reduce the working capital turnover, which results in low return on investment.

8. Liquidity verses profitability: Inadequate working capital may result in stock out of cost, reduced sales, loss of future sales, loss of customers, loss of goodwill, down time cost, idle labour, idle production and finally results in lower profitability.

9. Dividend policy: A study of dividend policy cannot be possible unless and otherwise the organization has sufficient available funds.

In the absence of proper planning and control, the company's inadequate working capital will cause the above said problems.

Working capital management under inflation:

One of the most important areas in the day-to-day management of working capital includes all the short term assets (current assets) used in daily operations. Such management will have more significance during the time of inflation. The following measures can be applied to control the working capital during the period of inflation.

Creditors turnover ratio:

It indicates the speed with which the payments are made to credit purchases. This can be computed as follows:

$$\text{Creditors payment period} = \frac{\text{Average Creditors}}{\text{Credit purchase}} \times 365$$

Higher creditors turnover ratio with a lower payment period shows that the creditors are paid promptly or even earlier. During inflation the company with help of bargaining power and good relation they can ask to increase the payment period, trade discount, cash discount, etc.

Stock turnover ratio:

A low stock turnover ratio may indicate a slow moving inventory suffering from low sales force. On the contrary, higher stock turnover ratio shows better performance of the company. Under this situation the company may keep relatively small amount of funds as resources. Thus during inflation the company tries to keep high stock turnover ratio.

$$\text{Stock turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average stock}}$$

This should be more during inflation than the ordinary period.

Debtors' turnover:

Debtors constitute an important component of the working capital and therefore the quality of debtors to a great extent determines the liquidity position during inflation. A higher ratio gives a lower collection period and a low ratio gives a

suppliers and authors of books publishers also want to operate to a low or negative working capital/ sales %.

Key Words

Gross current assets means the aggregate of all current assets including cash

Net current assets means the aggregate of all current assets less current liabilities. This is same as working capital.

Fixed working capital is the amount that remains more or less permanently invested as working capital in business.

Fluctuating working capital is the amount of working capital over and above the fixed amount of working capital. It may keep on fluctuating from period to period depending upon several factors.

Current liabilities, which are due for payment in the short run, say one year.

Self-assessment Questions/Exercises

1. What are current assets and current liabilities? Explain with suitable examples.
2. Discuss the different concepts of working capital.
3. Discuss the significance of working capital management in business enterprises.
4. Distinguish between fixed and fluctuating working capital. What is the significance of such distinction in financing working capital of an enterprise?

LESSON 2

Operating Cycle and Estimation of Working Capital

LESSON OUTLINE

1. Operating cycle
   a. Trading cycle
   b. Manufacturing cycle
2. Estimation of Working Capital requirements
   a. For trading firm
   b. For manufacturing organization

LEARNING OBJECTIVES

After reading this lesson you should be able to

- Understand what is operating cycle for trading and manufacturing firms.
- Know what are the possible methods to reduce the operating cycle period to increase the sales.
- Calculate operating cycle period.
- Estimate working capital requirements for trading and manufacturing concerns.

Therefore operating cycle requires a short time span behaviour cash to cash, the requirement of working capital will be low because very less number of processes in the operation is given below:

Cash ⟶ Inventories ⟶ Debtors ⟶ Bills Receivable ⟶ Cash

In the case of trading firm the operating cycle includes time required to convert (1) Cash into inventories (2) Inventories into debtors (3) Debtors into cash.

In the case of financing firm, the operating cycle is still less when compared to trading business. Its operating cycle includes time taken for (1) Conversion of cash into suitable borrowers and (2) Borrowers into cash.

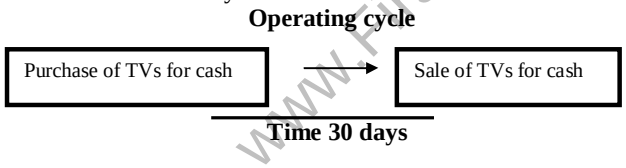
Example 1:

You have invested Rs.50,000 in your company on 1.1.2006 for buying and selling of color TVs assuming:

1. Inventory costing Rs. 50,000 is purchased at the beginning of each month.
2. All of the TVs were sold at the end of each month on cash for Rs. 60,000

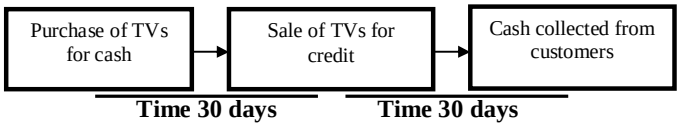
1. What is the operating cycle of the company?

The answer is 30 days



2. If the sales are made on account (credit) of 30 days terms what is the operating cycle of the company?

The answer is 60 days



Accounts receivable cycle period (ARCP)

= (Average Account receivable/Total of sales) x 365

Accounts payable cycle period (APCP)
= (Average account payable/Total credit purchase) x 365

where, Total credit purchase = cost of goods sold + ending inventory – beginning of inventory

For above calculations, the following points are essential:

1. The average value is the average of opening balance and closing balance of the respective items. In case the opening balance is not available, only the closing balance is taken as the average.

2. The figure 365 represents number of days in a year. Sometimes even 360 days are considered.

3. The calculation of RMCP, WPCP and FGCP the denomination is taken as the total cost raw material consumable, total cost of production total, cost of goods sold respectively since they form respective end products.

On the basis of the above, the operating cycle period:

Total operating cycle period (TOCP) = RMCP + WPCP + FGCP + ARCP
Net operating cycle period(NOCP) = TOCP-DP(deferred payment)(APCP)

The operating cycle for individual components are not constant in the growth of the business. They keep on changing from time to time, particularly the Receivable Cycle Period and the Deferred Payment. But the company tries to retain the Net Operating Cycle Period as constant or even less by applying some requirements such as inventory control and latest technology in production. Therefore regular attention on the firm's operating cycle for a period with the previous period and with that of the industrial average cycle period may help in maintaining and controlling the length of the operating cycle.

Cash ⟶ Purchase of raw materials ⟶ Work-in-progress ⟶
Finished goods ⟶ Debtors ⟶ Bills receivable ⟶ Cash

Operating cycle of a manufacturing concern starts from cash to purchase of raw materials, conversion of work in progress into finished goods, conversion of finished goods into Bills Receivable and conversion of Bills Receivable into cash. In the other words the operating cycle is the number of days from cash to inventory to accounts receivable back to cash. The operating cycle denotes how long cash is tied up in inventories and receivables. If the operating cycle requires a longer time span between cash to cash, the requirement of working capital will be more because of the huge funds required in all the process. If there is any delay in a particular process there will be further increase in the working capital requirement. A long operating cycle means that less cash is available to meet short-term allegations. A distillery has to make a heavy investment in working capital rather than a bakery, which has a low working capital.

Forecasting/estimate of working capital requirement

"Working capital is the life-blood and the controlling nerve centre of a business". No business can run successfully without an adequate amount of working capital. To avoid the shortage in working capital, an estimate of working capital requirements should be made in advance so that arrangements can be made to procure adequate working capital.

Suggested proforma for estimation of working capital requirements are given below:

Statement of working capital requirements

	Amount(Rs.)	Amount(Rs.)
Current Assets		
1.Stock of Raw materials		-------
2.Work-in-progress (for … months)		
a) Raw materials	--------	

Raw material	50% of selling price
Direct wages	10% of selling price
Overheads	20% of selling price

There is a regular production and sales cycle and wages and overheads accrue evenly. Wages are paid in the next month of accrual. Material is introduced in the beginning of production cycle.

You are required to find out:
(1) Its working capital requirement
(2) Its permissible bank borrowing as per 1st and 2nd method of lending.
(Please refer lesson 4 unit 5)

Solution:

-Statement of working capital requirement:

Current assets	**Rs.**	**Rs.**
Raw materials stock (69000 x 25 x 2/12)		2,87,000
Working progress:		
1. Raw materials (69,000 x 25 x 1/2)	1,43,750	
2. Direct wages (69,000 x 5 x 1/24)	14,375	
3. Overhead (69,000 x 10 x 1/24)	28,750	1,86,875
Finished goods: (69000x40x3/12)		6,90,000
Debtors: (69,000x40x3/12)		6,90,000
		18,54,375
Current Liabilities:		
Creditors Raw materials 69,000 x25x2/12	2,87,500	
Outstanding Wages 69,000 x 5 x 1/12	28,750	3,16,250
Working capital requirement	=	15,38,125

Assumptions: Debtors are taken at cost price not at selling price.

Working capital requirement

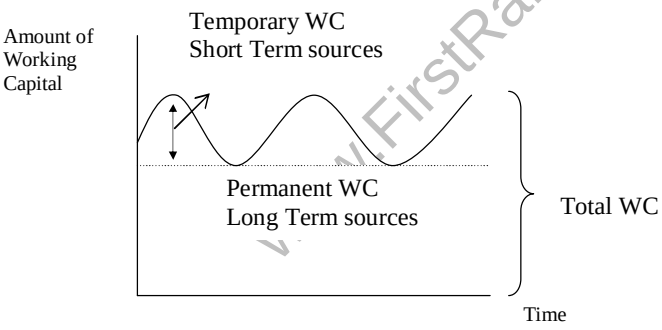
First lending method	Amount(Rs.)	Second lending method	Amount(Rs.)
Working capital requirement	15,38,125	Working capital requirement	15,38,125
Less: 25% Margin of above	3,84,531	Less: 25% Margin of current asset 1854375 x 25/100	4,63,594
Bank Borrowing	11,53,594	Bank Borrowing	10,74,531

Stock of finished goods (1 month)			
Material	24,00,000 x 40 / 100 x 12	80,000	
Labour	24,00,000 x 20 / 100 x 12	40,000	
Overheads	24,00,000 x 20 / 100 x 12	40,000	1,60,000
Debtors (2 months) at cost			
Material		1,60,000	
Labour		80,000	
Overheads		80,000	
Less: Current Liabilities			3,20,000
			6,40,000
Creditors (1 month) for raw material	24,00,000 x40 / 100 x 12		80,000

Introduction:

Once the financial manager has estimated to invest in current assets like raw material, working-in-progress, finished goods, debtors etc. the next step is, he must arrange for funds for working capital. Working capital management refers not only to estimating working capital requirement but also includes the process of bifurcating the total working capital requirement into permanent working capital and temporary working capital. The permanent working capital should be financed by arranging funds from long-term sources such as issue of shares, debentures and long-term loans. Financing of working capital from long term resources provide the following benefits:

(1) It reduces risk, since the need to repay loans at frequent intervals is eliminated.
(2) It increases liquidity since the firms need not worry about the payment of these funds in the near future.



The temporary working capital requirement should be financed from short-term sources such as borrowing loan from banks, creditors, factoring etc. The financing of working capital through short-term sources of funds has the benefit of **lower cost** and establishing close relationship with the banks.

a. Issue of shares:

Issue of shares is the most important sources for raising the permanent working capital. Shares are of two types – Equity shares and preference shares. Maximum amount of permanent working capital should be raised by the issue of equity shares.

b. Retained earnings:

It means the reinvestment by a concern of its surplus earning in its business. This is, a part of the earned profits may be ploughed back by the firm, in meeting their working capital needs. It is an internal source of finance and is most suitable.

2. Financing through long-term sources:

The fund, which is required for 7 to 20 years and above, is called long-term funds. Financing of working capital through long-term sources provides reduction of risk and increases the liquidity. These long-term sources can be raised through the following methods:

a. Redeemable preference shares:

Preference shares are those, which carry the following preferential rights over other classes of shares:

(i) A preferential right to payment of fixed dividend over equity shareholder.

(ii) A preferential right to repayment of capital in case of winding up of the company to other classes of shares.

Redeemable preference shares are those, which can be redeemed during the lifetime of the company. According to the companies (Amendment) Act, 1996,

a. Working capital term loans:

It refers to the quantum of credit that a bank should disburse. Tandon committee suggested three methods of lending which banks generally follow the second method of lending. As per this method, the borrower will have to contribute 25% of the total current assets. The remaining working capital gap will be funded by bank borrowings. Where borrower fails to bring such additional funds, the banks usually sanction "Working capital term loans" which the borrower is to repay in a phased manner. Such repayment time allowed is a maximum of five years. To put a pressure on the borrower for early repayment of such loan, the banks generally charge 1% higher rate on such loans over and above rates charged in cash credit account. However, such excess charge of interest is entirely in the jurisdiction of the bank, which may discriminate between borrowers depending financial status and future project of the concerned borrower.

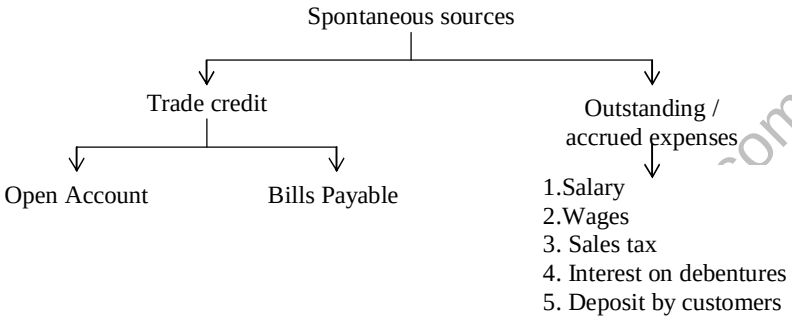
The concept of **"Working capital term loan"** has been introduced by Chore committee, which was appointed for reviewing working capital lending by banks subsequent to introduction of recommendation of Tandon committee.

b. Public fixed deposits:

Public deposits are the fixed deposits accepted by a business enterprise directly from public deposit as source finance have a large number of advantages such as simple and convenient source of finance, Taxation benefits, inexpensive sources of finance etc.

ctivity have zero cost and are termed as spontaneous sources. For example

suppliers supply goods, employees provide services where the payment are made at a latter stage. To an extent, the payment is delayed and the funds are made available to the firm. These are called trade liabilities or current liabilities. The two important spontaneous sources of short-term finance are (a). Trade credit and (b). Outstanding expenses / accrued expenses. These are explained in detail below:



A. Trade credit:

The credit extended in connection with the goods purchased for resale by a retailer or a wholesaler for materials used by manufacturers in producing its products is called the trade credit.

Trade credit is a form of short-term financing common is almost all types of business firm. As a matter of fact, it is the largest source of short-term funds. The amount of such financing depends on the volume of purchase and the payment timings. Small and new firms are usually more dependent on the trade credit, as they find it difficult to obtain funds from other sources. This trade credit may be extended to the customers in the form of (a) An opening account credit and (b) Acceptance credit management / bills payable.

2. **Flexibility:** The trade credit increases or decreases depending upon the growth of the firm. Moreover it need not pledge securities or adhere to strict payment schedule.

3. **Informality:** Trade credit is an informal spontaneous source of finance. It does not require to sign in the negotiable instruments to obtain the credit.

Demerits of trade credit:

1. **Increased cost:** The trade credit is usually very high when compared to cash sales. The seller while fixing the selling price will consider all explicit and implicit costs.
2. **Overtrading:** Trade credit facility may induce the buyer to buy a large quantity as a result it may occur in over trade.

B. Accrued expenses:

Another spontaneous source of short-term financing is the accrued expenses as the outstanding expense liabilities. Accrued expenses refer to services received by the firm but the payment for which has not been made. The accrued expenses represent an interest free source of finance. There is no explicit and implicit cost included in the accrued expenses. The most common accrued expenses are salary, wages and taxes. In these cases the amount may be due but the payments are not paid immediately. For example, a firm having a policy of paying salary and wages on a monthly basis. Similarly, the sales commission or target incentives, sales tax etc. are always payable with a time lag. The interest on debentures and borrowings is also payable periodically and thereby provide funds to the firms for the intervening period between two interest rates.

a. Cash credit: Cash credit arrangements are usually made against the security of commodities hypothecated with the bank. It is an arrangement by which a banker allows his customer to borrow money upto a certain limit. The interest is charged at the specified rate on the amount withdrawn and for the relevant period.

b. Overdraft: A firm, already having a current account with a banker is allowed to withdraw above the balance in the current account. The amount so overdrawn may be repaid by depositing back in the current account as and when the firm wants. The firm need not get permission from the banker every time it is overdrawing but one time approval is necessary. However a bank can review and modify the overdraft limit at any time. A cash credit differs from an overdraft in the sense that the former is used for long-term by commercial and industrial concerns during regular business while the latter is supposed to be a form of bank credit to be used occasionally and for shorter durations.

c. Bills discount and bills purchased: The banks also give short-term advances to their customers by discounting the bills of exchange. The discount depends upon the amount of the bill, the maturity period and the prime-lending rate prevailing at that time. The bills may be payable on demand or on maturity. Whenever bills payable on demand is discounted, it is called **bills purchased**, and when the bills payable at maturity is discounted by bank, it is called **bills discounting**.

Merits:

1. **Low cost:** Bank loans provided by the commercial banks are generally cheaper as compared to any other source of short-term finance.

Factoring is an ongoing arrangement between client and factor, where invoices raised on open account sales of goods and services are regularly assigned to 'the Factor' for financing, collection and sales ledger administration.

Factoring is a financing technique in which a business sells invoiced receivables at a discount to a bank or a financing house or to an internal finance company. The factor may or may not accept the incumbent credit risk. This is a service offered by a factoring company that enables companies to sell their outstanding book debts for cash.

Companies benefiting from factoring:

Companies that typically benefit from factoring include those that rapidly grow, seasonal, in start up mode, under capitalized, those that have a lengthy manufacturing cycle, those strained by slow turnovers of receivables, hurt by high bad debt losses and those saddled with a large customer concentration.

How it works:

The factor fully manages your sales ledger and provides you with credit control and collection services of all your outstanding debts. The invoices you issue upon a sale are sent to the factor that typically advances upto **80% to 90%** of the invoice amount to you. The balance, less charge, is paid when the customer makes payment directly to the factor. These services are disclosed to your customer who typically receives a letter from the factor, or attached note to your invoice, containing payment instructions to the factor. Funds are typically released to you with in **24 hours** of issuing the invoices.

receivables is borne by the selling firms. In case the factor firm has already given advance to the selling firm against the receivable, then the seller firm should reduce the advance to the factor firm in case of default by the customer.

2. Non-recourse factoring: It is also known as **full factoring.** Non-recourse factoring protects against customers who fail to pay. The basic feature of non-recourse factoring is that the risk of default is born by the factor firm and the selling firms in any case receives the sales amount. Thus the factor typically covers this risk by taking out credit insurance. The cost of the credit insurance is passed on to the selling firm and depends on the risk profile of your customer and the amount of your factor is typically between 0.3% and 0.7% of turnover. The coverage limit with the factor is normally 80% - 95% of the factored amount.

3. Other types of factoring: Factoring may be advanced factoring or maturity factoring. In the case of advance factoring 80 – 90% of the receivable is paid by the factor to the seller within 24 hours of issue of invoice and the balance less charges payable at the time of collection of receivables. In the case of maturity factoring no advance is payable to the seller, rather the payment is made only after collection from the customers.

Factoring vs. invoice discounting: If the business is already large enough to afford the staff and information system to efficiently manage the outstanding invoices, then the firm may want to consider an invoice discounting rather than factoring. It is identical to factoring except that in the sales ledger management the collection responsibility remains with the firm and the service is undisclosed to the customer.

banks have established factoring agencies. The first factoring i.e. the SBI commercial and factoring services Ltd started working in April 1991. This company looks after the business of Western India. The business of Northern India, Southern India and Eastern India are being looked after by Punjab national bank, Canara bank and Allahabad bank respectively. Honkong and Shangai Banking Corporation (HSBC) currently offers both domestic and international factoring. When such banks are fully in operation, it will be a boon to specially small and medium sections.

Forfaiting:

In February 1992, the RBI issued guidelines for the introduction of forfaiting, which refers to factoring of export receivables. It refers to discounting of future trade related receivables under credit, made available by exporters to the customers.

b. Commercial Papers (CPs).

Commercial Papers are debt instruments issued by corporates for raising short-term resources from the money market. These are unsecured debts of corporates. They are issued in the form of promissory notes, redeemable at par to the holder at maturity. Only corporates who get an investment grade rating can issue CPs as per RBI rules. Though CPs are issued by corporates, they could be good investments if proper caution is exercised.

c. Inter Corporate Deposits (ICD)

Sometimes, the companies borrow funds for a short-term period; say up to six months, from other companies, which have surplus liquidity for the time being. The ICD are generally unsecured and are arranged by a financier. The ICD are very common and popular in practice, as these are not influenced by the legal hassles. The convenience is the basic virtue of this method of financing. There is no regulation at present in India to regulate these ICD. Moreover, these are not

LESSON 4

Working Capital and Banking Policy

LESSON OUTLINE

1. Dehejia committee 1969
2. Tandon committee reports 1974
   Lending practices
   a) Inventory and receivable norms
   b) Maximum permissible bank finance
      i. First method of lending
      ii. Second method of lending
      iii. Third method of lending
   c) Style of credit
   d) Information and reporting system
3. Chore committee reports 1980
4. Marathe committee reports 1982
5. Chakravarthy committee reports 1985
6. Kannan committee reports 1997
7. Recent RBI guidelines

LEARNING OBJECTIVES

After reading this lesson you should be able to

- Understand why banks are charging different interest rates for long-term and short-term loans.
- Understand the recommendations of different committees for working capital.
- Identify the Maximum Permissible Bank Finance (MPBF) for working capital requirements.
- Estimate maximum permissible bank finance available under different methods of lending.
- Know recent trends adopted by RBI with regards to working capital.
- How to regulate working capital finance under the FAST TRACK SYSTEM?
- What is the working capital policy in liberalized scenario?

5. Chakravarthy Committee Report 1985.
6. Kannan Committee Report 1997.

1. Dehejia Committee:

A study group under the chairmanship of V.T. Dehejia was constituted in 1968 in order to determine " the extent to which credit needs of industry and trade were inflated and to suggest ways and means of curbing this phenomenon". The committee submitted its reports in September 1969.

Findings: The important findings of the committee are given below.

1. Higher growth rate of bank credit to industry than the rise in industrial output.
2. Banks in general sanctioned working capital loans to the industry without properly assessing their needs based on projected financial statements.
3. There was also a tendency on the part of industry to divert short-term bank credit to some extent for acquiring fixed assets and for other purposes.
4. The present lending system facilitated industrial units to rely on short-term bank credit to finance for fixed assets.

Recommendations: On the basis of the above findings the following recommendations were made by Dehejia Committee to bring about improvements in the lending system:

1. Credit application should be appraised by the bankers with reference to present and projected total financial position as shown by cash flow analysis and forecast submitted by borrowers.

2. The total cash credit requirement is divided into two parts namely (i) **Hard core** components representing the minimum level of raw materials, finished goods and stores which the industry requires for maintaining a given level of production and which is made on a formal term loan basis. (ii) Short-term components representing the fluctuating part of current assets.

Findings: On the basis of the reference given above, the committee studied the existing system of working capital finance provided to industry and identified the following as its major weaknesses.

1. The banks do not have any credit appraisal or planning. It is the borrower who decides how much he would borrow.
2. The security-based approach to lending has led to division of funds to purchase of fixed assets.
3. Bank credit is treated as the first source of finance rather than being taken as a supplementary to other sources of finance.
4. The working capital finance should be made available only for a short period, as it has otherwise, led to accumulation of inventories with the industry.

Recommendations: The report was submitted on 9th August 1975 and it is a landmark in the history of financing working capital by commercial banks in India. The Tandon Committee made comprehensive recommendation regarding the bank lending practices, which can be broadly classified into four groups'. Important features of the Tandon Committee recommendations based on the fixation of norms for bank lending to industry are as follows.

Norms for Bank Lending:

1. Inventory and receivable norms

The borrowers are allowed to keep reasonable current assets particularly inventory and debtors. The normal current assets based on economic ordering levels and certain level of safety, should be financed by banker. Finance to borrower in the form of working capital should not be made available for profit making or to keep excess inventory. Similarly the bank should finance the bills receivable, which are in line with the practices of the borrower's industry. The norms have been worked out according to the time element. The limit of the

Example 1: Amount of maximum permissible bank borrowings as per the first method can be ascertained as follows:

	Amount(Rs.)
Total CA required by the borrower	50,000
Current liabilities (excluding bank borrowing)	10,000
Working Capital Gap	40,000
Less: 25% from borrower through long-term source	10,000
Maximum Permissible bank borrowing	30,000

Second method:

Under this method the borrower should provide 25% of the total current assets through long-term funds and this will give a current ratio of 1.33:1

Example 2:

The maximum permissible bank borrowings as per second method can be ascertained as follows:

	Amount(Rs.)
Total CA required by the borrower	50,000
Less: 25% to be provided by borrower through long-term funds	12,500
Less: Current liabilities (excluding bank borrowing)	10,000
Maximum Permissible bank borrowing	27,500

Third method:

In this method the borrower should contribute from long-term sources to the extent of core current assets (Fixed Current assets) and 25% of the balance of the current assets. The remaining of the working capital gap can be met from bank borrowings. This method will further strengthen the current ratio.

Reserve Bank's direction:

The RBI accepted the recommendations of the committee as a whole. It instructed the commercial banks in 1976 to put all the borrowers having aggregate credit limits from banking system in excess of Rs.10 lakhs, under the first method lending.

Example 4:	**Amount(Rs.)**		**Amount(Rs.)**
Current Liabilities		**Current Assets**	
Sundry creditor	400	Raw Materials	400
Other sundry liabilities	100	Working Progress	250
Bank borrowing	500	Finished Goods	180
		Sundry debtors	250
		other current, asset	50
	1000		1130

Thus current asset = Rs.1130, current liabilities(other than bank borrowing) = Rs.500

Find out MPBF and excess borrowings by the firm under the three methods of lending.

Method 1

(a) Total current assets	1130
(b) Less: other current liabilities (Excluding bank borrowings)	500
(c) Working capital gap	630
(d) Less: 25% margin on working capital gap (To be funded from long-term sources)	157
(e) Maximum permissible bank finance (c-d)	473
(f) Excess Borrowing (Bank Borrowing –e = 500-473)	27

3. Style of credit:

The Tandon committee also suggested that total MPBF should be bifurcated into two components 1. Loan component, which represents the minimum level of borrowing throughout the year and 2. Demand cash credit component, which would take care of the fluctuating needs and is required to be reviewed periodically. The demand cash credit component should be charged slightly higher interest rate than the loan components. This would provide the borrower an incentive for better planning. Apart from the loan component and cash credit component, a part of the total financing requirements should also be provided by way of bills limit to finance the seller's receivables. The proposed system of lending and the style of credit might be extended to all borrowers having credit limits in excess of Rs. 10 lakhs from the banking system.

4. Information and reporting system:

In order to ensure that the borrowers do not use the cash credit facility in an unplanned manner and they keep only required level inventories and receivables, the committee suggested a new information system. Under this system the borrowers are required to submit the following documents to the bankers periodically.

(i) A copy of the audited financial statements at the end of each year.

(ii) A copy of a projected financial statement and funds flow statement for the next year.

(iii) Quarterly budgeting cum reporting statements.

(iv) Monthly stock statement.

borrowers. Therefore the committee recommends withdrawing bifurcation of accounts.

3. Separate limit for peak and non-peak level requirements:

The banks have been asked to fix separate credit limits wherever feasible for the normal non-peak level and peak level credit requirements and indicate the periods during which the separate limits would be utilised by the borrowers. If, however, there is no pronounced seasonal trend, peak-level and normal requirements should be treated as identical and limits should be fixed on that basis. It should be noted that peak-level and non-peak level concepts apply not only to agriculture-based industry but also to certain other consumer industries where the demand may have pronounced seasonal tendencies. Within the limits sanctioned for the peak-level and non-peak level periods the borrowers should indicate before the commencement of each quarter the requirements of funds during that quarters. The statement so submitted by the borrowers should form the basis for quarterly review of the accounts.

4. Submission of Quarterly Statements:

The quarterly statements should be submitted by all the borrowers enjoying working capital limit of Rs.50 lakhs and above and they will have to bring gradual additional contribution based on second method of lending as prescribed by the Tandon Committee.

4. Marathe committee:

The RBI, in 1982, appointed a committee under the chairmanship of Marathe to review the working of **credit authorization scheme (CAS)** and suggest measure for giving meaningful direction to the credit management function of

5. Chakravarthy committee:

The Reserve Bank of India appointed another committee under the chairmanship of Mr. Chakravarthy to review the working capital of the monetary system of India. The committee submitted its report in April 1985. The committee made two major recommendations in regard to the working capital finance

1. Penal Interest for Delayed Payment

The committee has suggested that the government must insist all public sectors units, large private sector units and government departments must include penal interest payment clause in their contracts for payment delayed beyond a specified period. The penal interest may be fixed at 2 percent higher than the minimum lending rate of the supplier's bank.

2.Classification of credit limit under three different heads

The committee further suggested that the total credit limit to be sanctioned to a borrower should be considered under the three different heads: (1) Cash credit I to include supplies to government, (2) Cash credit II to cover special circumstances and (3) Normal working capital limit to cover the balance credit facilities. The interest rates proposed for the three heads are also different. Basic lending rate of the bank should be charged to cash credit II, and the normal working capital limit be charged as below:

(a) For cash credit portion:	Maximum prevailing lending rate of the bank.
(b) For bill finance portion:	2% below the basic lending rate of the bank.
(c) For loan portion:	The rate may vary between the minimum and maximum lending rate of the bank.

capital needs of the borrowers within the guidelines and norms already prescribed by reserve bank of India.

(2) The turnover method may continue to be used as a tool to assess the requirement of small borrowers. For small scale and tiny industries, this method of assessment has been extended upto total credit limits of Rs 2 crore as against existing limit of 1 crore.

(3) Banks may now adopt cash budgeting system for assessing the working capital finance in respect of large borrowers.

(4) The banks have also been allowed to retain the present method of MPBF with necessary modification or any other system as they deem fit.

(5) Banks should lay down transparent policy and guidelines for credit dispensation in respect of each broad category of economic activity.

(6) The RBI's instrument relating to directed credit, quantitative limits on lending and prohibitions of credit shall continue to be in force. The present reporting system to RBI under the Credit Monitoring Arrangement (CMA) shall also continue in force.

Working Capital Assessment:

After dissolution of Tandon Committee guidelines (Known as Maximum Permissible Bank finance – MPBF), except state bank of India (SBI) which is the largest commercial bank in the country, no other bank has come out with any guidelines for assessing the working capital. Most of the banks are virtually following same MPBF with or without slight modification. Other banks are very closely watching the SBI guidelines for slowly adopting the SBI guidelines in one form or the other. The methods, which are being followed by the SBI, are as follows.

the concept of MPBF enunciated by Tandon Working group. So, Working Capital finance henceforth will be determined only by the banks according to their perception of the borrower and the credit needs.

Keywords:

Working capital gap refers to current assets minus current liabilities excluding bank borrowing.

Maximum permissible bank finance indicates working capital from the bank under short-term interest rate finance available to company.

Hard core working capital is a fixed current asset maintained by organization throughout its existence as long as production cycle continues. They are permanent in nature.

Self-assessment Questions/Exercises

1.Expalin the background and recommendation of tandon committee.

2.What requirements are to be complied with by a borrower before he could be placed on the fast track?

3. Outline the recommendations of the Marathe committee.

4. What is meant by working capital term loan? (WCTL)

5. What are the three alternative methods of working capital out of the maximum permissible level of bank borrowings recommended by the tandon committee? 6. Enumerate any five of the main recommendation of "chore committee" as accepted by reserve bank of India.

7. Write short note on hard-core working capital.

8. How would you assess the working capital requirement of your company?

9. What are the main recommendations of Tandon Committee?

LESSON 5

Working Capital Management
Dimension of Working Capital Management

LESSON OUTLINE

1. Liquidity Vs profitability - Return-risk trade off
2. Current assets to Sales level
3. Financing mix in current assets
4. A good working capital management policy
5. Overtrading and under trading
6. Working capital leverage

LEARNING OBJECTIVES

After reading this lesson you should be

able to

- *Understand return-risk trade off and know the different level of current asset for different sales level forecast, identify the financing mix in order to invest in working capital.*
- *What are the important factors to consider for good working capital management policy?*
- *Understand, how to increase Return on Investment (ROI) with working capital management.*
- *Differentiating over trading and under trading.*

5. Dimension 5 is concerned with other techniques used for working capital management such as
   a) Ratio analysis
   b) Over trading and under trading
   c) Working capital leverage

Dimension 1: Liquidity vs Profitability:

An important aspect of a working capital policy is to maintain and provide sufficient liquidity to the firm. Like most corporate financing decisions, the decision on how much working capital should be maintained involves a trade-off. Having a large net working capital may reduce the liquidity-risk faced by the firm, but it can have a negative effect on the cash flows. Therefore, the net effect on the value of the firm should be used to determine the optimal amount of working capital. A firm must maintain enough cash balance or other liquid assets so that it never faces problems of payment to liabilities. Does it mean that a firm should maintain unnecessarily large liquidity to pay the creditors? Can a firm adopt such a policy? Certainly not. "There is also another side for a coin". Greater liquidity makes it easy for a firm to meet its payment commitments, but simultaneously greater liquidity involves cost also.

The risk-return trade-off involved in managing the firm's working capital is a trade-off between the firm's liquidity and its profitability. By maintaining a large investment in current assets like cash, inventory etc., the firm reduces the chance of (1) production stoppages and the loss from sales due to inventory shortage and (2) the inability to pay the creditors on time. However, as the firm increases its investment in working capital, there is not a corresponding increase in its expected returns. As a result the firm's return on investment drops because the profit is unchanged while the investment in current assets increases.

assets). Consequently, the profitability of the firm will increase but the liquidity will be reduced. The firm is now exposed to a greater risk of insolvency. The risk return syndrome can be summed up as follows: when liquidity increases, the risk of insolvency is reduced. However, when the liquidity is reduced, the profitability increases but the risks of insolvency also increase. So, profitability and risk move in the same direction. What is required on the part of the financial manager is to maintain a balance between risk and profitability. Neither too much of risk nor too much of profitability is good. This can be explained by means of the balance sheet of PQR Ltd.

The following is the balance sheet of PQR Ltd. as on 31st Dec 2006:

Liabilities	Rs	Asset	Rs
Share capital	5,00,000	Fixed asset	10,00,000
Debenture	6,00,000	Current Asset	2,00,000
Current liabilities	1,00,000		
	12,00,000		12,00,000

The firm is earning 10% return on fixed assets and 2% return on current asset. Find out the effect on liquidity and profitability of the firm for the following:

1. Increase in current asset by 25%.
2. Decrease in current asset by 25%

Solution:

The present earning of the firm may be ascertained as follows:

10% return on fixed asset (10,00,000 x 10/100)	Rs 1,00,000
2% return on current asset (2,00,000 x 2/100)	Rs 4,000
Total return	1,04,000
Total assets (10,00,000 + 2,00,000)	Rs 12,00,000
Rate of return (Earning/total asset)(1,04,000/12,00,000) x 100	8.67%
Ratio of current asset to total asset (2,00,000/12,00,000)	16.7%

from 16.7 % to 12.5% and the ratio of current asset to current liabilities will also go down from 2 to 1.5 times. However, the profitability increases from 8.67% to 9%.

Thus the problem shows that liquidity and return are opposite forces and the financial manager will have to find out a level of current asset where the risk as well as the return, both optimum. The firm just cannot decrease the current asset to increase the profitability because it will result in increase of risk also. The firm should maintain the current asset at such a level at which both the risk and profitability are optimum.

Dimension 2: Determining the ratio of current assets to sales level:

As already said, there is an inevitable relationship between the sales and the current assets. The actual and the forecast sales have a major impact on the amount of current assets, which the firm must maintain. So, depending upon the sales forecast, the financial manager should also estimate the requirement of current assets. This uncertainty may result in spontaneous increase in current assets in line with the increase in sales level, and may bring the firm to a face-to-face tight working capital position. In order to overcome this uncertainty, the financial manager may establish a minimum level as well as a safety component for each of the current asset for different levels of sales. But how much should this safety component be? It may be noted that in fact, this safety component determines the type of working capital policy a firm is pursuing. There are three types of working capital policies which a firm may adopt i.e. conservative, moderate and aggressive working capital policy. These policies describe the relationship between sales level and the level of current asset and have been shown in figure

illustrated below:

WORKING CAPITAL POLICIES AND PROFITABILITY

Particular	Conservative policy	Aggressive Policy
Sales	20,00,000	20,00,000
Earnings (EBIT)	5,00,000	5,00,000
Fixed Asset	10,00,000	10,00,000
Current Asset	12,00,000	10,00,000
Total Asset	22,00,000	20,00,000
Profitability=Return on total investment / Total Asset	5,00,000 / 22,00,000 X 100 = 22.7%	5,00,000 / 20,00,000 X 100 = 25%

In the conservative policy the firm has more current assets, which results in high liquidity, low risk and low return (22.7%). Where as in the aggressive policy the firm has less current assets, which result in low liquidity, high risk and high return (25%).

Dimension 3: Financing of working capital:

Short-term Vs long-term financing:

A firm should decide whether or not it should use short-term financing. If short-term financing has to be used, the firm must determine its portion in total financing. This decision of the firm will be guided by the risk-return trade-off. Short-term financing may be preferred over long-term financing for two reasons: (1) the cost advantage and (2) flexibility. But short-term financing is more risky than long-term financing.

Cost of financing:

The cost of financing has an impact on the firm's return. As short-term financing costs less, the return would be relatively higher. Long-term financing not only

risk and return. This **trade-off** may be further explained with the help of an example.

Suppose that a firm has an investment of Rs. 5 lakhs in its assets, Rs 3 lakhs invested in fixed assets and Rs. 2 lakhs in current asset. It is expected that assets yield a return of 18% before interest and taxes. Tax rate is assumed to be 50%. The firm maintains a debt ratio of 60%. Thus, the firm's assets are financed by 40% equity that is Rs 2,00,000 equity funds are invested in its total assets. The firm has to decide whether it should use a 10% short-term debt or 12% long-term debt. The financing plans would affect the return on equity funds differently. The calculations of return on equity are shown in table.

Comment [h4]:

Financing plans:

	Conservative Amount(Rs.)	**Moderate Amount(Rs.)**	**Aggressive Amount(Rs.)**
Fixed asset	300000	300000	300000
Current asset	200000	200000	200000
Total asset	500000	500000	500000
Short-term Debt(10%)	60000	150000	300000
Long-term Debt(12%)	240000	150000	0
EBIT	90000	90000	90000
Less: Interest	34800	33000	30000
EBT	55200	57000	60000
Less: Tax 50%	27600	28500	30000
Net Income	27600	28500	30000
Equity	200000	200000	200000
Return on equity	13.8%	14.25%	15%
SF/TF	12%	30%	60%

where SF = Short-term fund; TF = Total funds

It is clear from the table that return on equity is highest under the aggressive plan and lowest under the conservative plan. The result of moderate plan is in between these two extremes. However, aggressive plan is more risky

Fig. 5.2:The risk-return trade-off and financing mix

Dimension 4: A sound working capital management policy

General Rules

- Set planning standards for stock days, debtor's days and creditor days.
- Having set planning standard (as above) - keep up to them. Impress on staff that these targets are just as important as operating budgets and standard costs.
- Instill an understanding amongst the staff that working capital management produces profits.

Rules on Stocks

- Keep stock levels as low as possible, consistent with not running out of stock and not ordering stock in uneconomically small quantities.
- Consider keeping stock in warehouse, drawing on it as needed and saving warehousing cost.

Rules on Debtors/Customers

- Assess all significant new customers for their ability to pay. Take references, examine accounts, and ask around. Try not to take on new customers who would be poor payers.
- Re-assess all significant customers periodically. Stop supplying existing customers who are poor payers-you may lose sales, but you are after quality of business rather than quantity of business. Sometime poor-paying customers suddenly find cash to settle invoices if their suppliers are being cut off. If customers can't pay / won't pay let your competitors have them-give your competitors a few more problems.
- Consider factoring sales invoice – the extra cost may be worth it in terms of quick payment of sales revenue, less debtors administration and more time to carry out your business (Rather than spend time chasing debts)
- Consider offering discounts for prompt settlement of invoice, but only if the discounts are lower than the costs of borrowing the money owed from other sources.

For sound working capital management one should understand what is overtrading and undertrading and how it can be overcome and hence it is discussed in detail below:

Overtrading:

Overtrading is an aspect of undercapitalisation, which means an attempt being made by business concern to increase value of operation with insufficient amount working capital. As a result the turnover ratio will be more, current and liquidity ratio will be less under this situation, the firm may not be in a position to maintain the sufficient amount of current assets like cash, bills receivables, inventories etc., and has to depend upon the mercy of the suppliers to supply them at the right time. The firm is also not in a position to extend credit to its customers on one side and on the other side the firm may delay the payment too the creditors. This situation should not be continued for a longer period, as it is dangerous for the business since disproportionate increase in the operations of the business without adequate working capital may bring a sudden collapse.

The over trading should be carefully identified and overcome in the early stage itself in order to place the firm in the right direction. In the case of overtrading, 1. A firm can witness higher amount of creditors than the debtors. 2. A firm may buy the fixed assets with the help of short-term sources such cash credit, overdraft, Trade creditors etc, and 3. The firm will have a low current ratio and a high turn over ratio. The cure for overtrading is very simple (1) The firm can go for sufficient amount of long-term sources like issue of share, issue of debenture, term loans etc. (2) In case if the above is not possible the operations have to be reduced to manage with the help of present sources of funds available. (3). Sell the business as a going concern.

Working Capital Leverage expresses the relationship between efficiency of WCM and ROI. Insufficient Working Capital Management leads to decrease in the turn over which results in decrease profit which in turn results in decreased ROI. On the other hand increase in operating cycle of the business efficiently will lead to increase in turnover and hence higher profitability.

Key Words

1. **Conservative approach** refers the working capital needs are primarily financed by long-term sources and the use of short-term sources may be restricted to unexpected and emergency situation.

2. **Aggressive approach** means the firm decide to finance a part of the permanent working capital by short-term sources.

3. **Hedging approach** means trade-off between conservative and aggressive approach.

4. **Working capital leverage** expresses the relationship between efficiency of working capital management and return on investment.

5. **Over trading** is an aspect of under capitalization, which means an attempt being made by business concern to increase value of operation with insufficient amount of working capital.

6. **Under trading** means improper utilisation of working capital. It is due to overcapitalisation.

Self-assessment Questions/Exercises

1. "In managing working capital the finance manager faces the problem of compromising the conflicting goals of liquidity and profitability". Comment what strategy should the finance manager develop to solve this problem?

2. How would you judge the efficiency of the management of working capital in a business enterprise? Explain with the help of hypothetical data.