

STRATEGIC FINANCIAL MANAGEMENT

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DIRECTORATE OF DISTANCE EDUCATION UNIVERSITY OF JAMMU M. COM. SECOND SEMESTER (NCBCS) STRATEGIC FINANCIAL MANAGEMENT CORE COURSE

Course No. M.COM-C 212	Maximum Marks : 100	
Credit : 4	External: 80	
Time: 3 hours	Internal : 20	
(Syllabus for the examination to be held in May 2020, 2021, 2022)		

OBJECTIVE

To develop an understanding of the concept, scope, functions and relevant techniques of financial analysis with respect to strategic orientation for success in the globalised era.

UNIT I : BASICS OF FINANCIAL MANAGEMENT 1 - 153

Concept; Nature; Scope; Objectives of financial management; Functions of finance manager; Interface of financial management with other functional areas; Challenges faced by finance managers in globalisation era; Critical appraisal of different securities as sources of finance; Financial planning and forecasting; Concept, types and techniques of financial analysis; Financial policy and corporate strategy.

UNIT-II : CAPITAL BUDGETINGAND COST OF CAPITAL 154-249

Concept, Nature, process of capital budgeting; Techniques of evaluting capital budgeting; Payback period, Accounting rate of return, net present value method, Internal rate of return and Profitability index methods; Cost of Capital-Concept, Importance; Specific cost capital - computation of cost of equity; Preference, debt and retained earnings; Composit cost of capital.

UNIT-III: LEVERAGES AND CAPITAL STRUCTURE 250 - 337

Leverage - Concept, Types, of Leverage; Operating leverage, Financial leverage and combined leverage; Capital structure - Concept, assumptions; Approaches; Net income approach; Net operating income approach; Traditional approach; MM approach; Factors influencing capital structure.

UNIT-IV: WORKING CAPITAL MANAGEMENT 338 - 483

Concept; Need for working capital; Factors influencing the composition of working capital; Interdependence among components of working capital; Operating cycle approach to working capital; Cash management; Concept and technique of cash management ; Inventory Management; Concept; Types of inventory; Costs of inventory; Techniques of Inventory management; Receivables managemen-Concept; Credit Standards; Credit analysis; Credit terms; Critical appraisal of short term sources of finance ; Management of earnings.

BOOKS RECOMMENDED

- Van Horne J. : Financial Management and Policy, Pearson Education, Delhi.
- Brealy and Myers; Principal of Corporate Finance, Tata McGraw Hill, New Delhi.
- Prassanna Chandra, Financial Management (Theory and Practice), Tata McGraw Hill, New Delhi.

- Khan, M. Y. & Jain, P. K: Financial Management, Tata McGraw Hill, New Delhi.
- Pandey, I.M., Financial Management, Vikas Publisher.
- John J., Financial decision making : Concept, Problem & Cases, Prentice Hall.

NOTE FOR PAPER SETTING

The paper consists of two sections. Each section will cover the whole of the syllabus without repeating the questions in the entire paper.

Section A: It will consist of eight short answer questions, selecting two from each unit. A candidate has to attempt any six questions and answer to each question shall be within 200 words. Each question carries four marks and total weightage to this section shall be 24 marks.

Section B: It will consist of six essay type questions with answer to each question within 800 words. One question will be set atleast from each unit and the candidate has to attempt four. Each question will carry 14 marks and total weightage shall be 56 marks.

MODEL QUESTION PAPER

STRATEGIC FINANCIAL MANAGEMENT

Time: 3 hours

Max. Marks: 80

SECTION-A

Note : Attempt any five questions. Each question carries four marks. Answer to each question should be within 200 words.

- 1. Differentiate between financial planning and forecasting.
- 2. Explain in brief the nature and scope of financial management.
- 3. Enumerate the importance of cost of capital.
- 4. Write a short note on NPV method of capital budgeting.
- 5. Explain net income approach.
- 6. What are the factors influencing capital structure ?
- 7. Explain management of earnings.
- 8. What do you mean by cash management ?

SECTION-B

Note : Attempt any four questions. Each question carries 14 marks. Answer to each question should be within 800 words.

- 1. Critically appraise the different securities as sources of finance.
- 2. Explain the concept of payback period. Why does this method enjoy a good deal of popularity among businessmen? Explain its limitation also.
- 3. Compare and contrast the terms cost of capital and cost of equity.
- 4. What is the significance of capital structure ? Describe the process of planning and designing capital structure.
- 5. What do you meant by receiveables management ? Discuss the factors which influence the size of receiveables.
- 6. Define inventory and its kinds. What are the various techniques of inventory management ?

BASICS OF FINANCIAL MANAGEMENT

UNIT-I

Lesson No. 1

CONCEPT, NATURE, SCOPE, OBJECTIVES OF FINANCIAL MANAGEMENT

STRUCTURE

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Meaning of Business Finance
- 1.4 Concept of Financial Management
- 1.5 Evolution of Financial Management
- 1.6 Elements of Financial Management
- 1.7 Financial Decisions
- 1.8 Nature of Financial Management
- 1.9 Scope of Financial Management
- 1.10 Objectives of Financial Management
- 1.11 Summary
- 1.12 Glossary
- 1.13 Self Assessment Questions
- 1.14 Lesson End Exercise
- 1.15 Suggested Readings

1.1 INTRODUCTION

In our present day economy, finance is defined as the provision of money at the time when it is required. Every enterprise, whether big, medium or small, needs finance to

carry on its operations and to achieve its targets. In fact, Finance is so indispensable today that it is rightly said to be the lifeblood of an enterprise. Without adequate finance, no enterprise can possibly accomplish its objectives.

The subject of finance has been traditionally classified into two classes:

- Public Finance
- Private finance



As cleared from the above table, public finance deals with the requirements, receipts and disbursement of funds in the government institutions like states, local self governments and central government. Private finance deals with the requirements, receipts and disbursement of funds in case of an individual, a profit seeking business organization and a non-profit organization.

1.2 OBJECTIVES

After you have studied this unit, you should be able to describe :-

- the meaning and evolution of financial management
- its elements, nature and its importance
- type of various financial decisions that a firm has to take

1.3 MEANING OF BUSINESS FINANCE

The term "Business Finance" is composed of two words: business and finance, so it is essential to firstly understand the meaning of these two words.

The word business literally means 'state of being busy'. All human activities relating to the production and distribution of goods and services for satisfying human wants are known as business. It also includes all those activities which indirectly help in production and distribution of goods and services for satisfying human wants, such as, transport, insurance, etc. Finance in simple terms may be defined as the provision of money at the time when it is required. Finance refers to the management of flow of money through an organization. It concerns with the application of skills in the manipulation, use and control of money.

Having studied the meaning of these two terms, we can develop the meaning of the term 'Business Finance' as an activity or process which is concerned with acquisition of funds, use of funds and distribution of profits by a business firm.

Business Finance can be further subdivided into three categories:

- (a) Sole proprietory Finance
- (b) Partnership firms finance
- (c) Company or Corporation Finance

1.4 CONCEPT OF FINANCIAL MANAGEMENT

Financial management means the management of the finances of a business or an organization in order to achieve financial objectives. It is also known as corporation finance.

It is defined as planning, organizing, directing and controlling the financial activities such as procurement and utilization of funds of the enterprise. It means applying general management principles to financial resources of the enterprise." It involves the efficient and effective management of funds in such a manner as to accomplish the objectives of the organization.

Taking a commercial business as the most common organizational structure, the key objectives of financial management would be to:

- Create wealth for the business
- Generate cash, and
- Provide an adequate return on investment bearing in mind the risks that the business is taking and the resources invested.

To sum up in the simple words, we can say that finance function has become so important for an organization that it gives birth to Financial management as a separate subject. Financial management refers to that part of the management that is concerned with the planning and controlling of firm's financial resources. It deals with finding out various sources for raising funds for the firm. The sources must be suitable and economical for the firm.

Definitons :

(1) J. L. Mass : "Financial Management is the operative activity of a business that is responsible for obtaining and effectively utilising the funds necessary for efficient operation.

(2) Weston and Brigham : "Financial Management is an area of financial decision -making, harmonising individual motives and enterprise goals".

1.5 EVOLUTION OF FINANCIAL MANAGEMENT

Financial management emerged as as distinct field of study only in the early part of this century as a result of consolidation movement and formation of large sized business undertakings.

- In the initial stages of the evolution of financial management, emphasis was placed on the study of sources and forms of financing the large sized business enterprises.
- The grave economic recession of 1930's rendered difficulties in raising finance from banks and other financial institutions. As a result the ways and means of evaluating the credit worthiness of firms were developed.
- The post world war 2nd era necessitated reorganization of industries and the need for selecting sound finance structure
- In the early 50's the emphasis shifted from the profitability to liquidity and from institutional finance to day to day operations of the firm.

The techniques like 'capital budgeting' were also developed. Thus the scope of financial management widened to include the process of decision making within the firm

- The modern phase began in mid-fiftees and the discipline of financial management has now become more analytical and quantitative.
- 1960's witnessed phenomenal advances in the theory of 'portfolio analysis by Microwitz, Sharpe, etc.
- Capital Asset Pricing Model (CAPM) was developed in 1970's. The CAPM suggested that some risks in the investments can be neutralized by holding diversified portfolio of securities.
- The 'Option pricing Theory' was also developed in the form of the Binomial Model and Black-Scholes model during this period.
- The role of taxation in personal and corporate finance was emphasized in 80's
- Further new capital market instruments like PCD's, FCD's, etc were also introduced.
- Globalization of markets witnessed the emergence of 'Financial Engineering 'which involves the design, development and implementation of innovative financial instruments and formulation of creative solutions to financial problems.
- The techniques of models, mathematical programming and simulations are presently being used in financial management and it has achieved the prime place of importance.

We may conclude that financial management has evolved from a branch of economics to a distinct subject of detailed study of its own.

1.6 ELEMENTS OF FINANCIAL MANAGEMENT

An element is defined as a part or aspect of something especially one that is essential or characteristic. As far as financial management is concerned, there are three key elements to the process of financial management:

- Financial Planning
- Financial Control
- Financial Decision making

(1) Financial Planning

Management need to ensure that enough funding is available at the right time to meet the needs of the business so that no opportunity is missed. In the short term, funding may be needed to invest in equipment and stocks, pay employees and fund sales made on credit.

In the medium and long term, funding may be required for significant additions to the productive capacity of the business or to make acquisitions.

(2) Financial Control

Financial control is a critically important activity to help the business ensure that the business is meeting its objectives and there is effective and efficient utilization of funds. It is done in order to ensure that there is no wastage. Financial control addresses questions such as:

- Are assets being used efficiently?
- Are the businesses assets secure?
- Does management act in the best interest of shareholders and in accordance with business rules?

(3) Financial Decision-making

The key aspects of financial decision-making relate to investment, financing and dividends:

• Investments must be financed in some way – however there are always financing alternatives that can be considered. For example it is possible to raise finance from selling new shares, borrowing from banks or taking credit from suppliers.

• A key financing decision is whether profits earned by the business should be retained rather than distributed to shareholders via dividends. If dividends are too high, the business may be starved of funding to reinvest in growing revenues and profits further.

1.7 FINANCIAL DECISIONS

Financial decisions refer to decisions concerning financial matters of a business firm. There are many kinds of financial management decisions that the firm has to make inorder to maximize shareholder's wealth like kind of assets to be acquiresd, pattern of capitalization etc. we can classify these decision into three major groups:

- (a) Investment decisions
- (b) Financing decisions
- (c) Dividend decisions

(a) Investment decisions

Since funds involve cost and are available in a limited quantity, its proper utilisation is very necessary to achieve the goal of wealth maximisation.

An investment decision revolves around spending capital on assets that will yield the highest return for the company over a desired time period. In other words, the decision is about what to buy so that the company will gain the most value.

To do so, the company needs to find a balance between its short-term and long-term goals. In the very short-term, a company needs money to pay its bills, but keeping all of its cash means that it isn't investing in things that will help it grow in the future. On the other end of the spectrum is a purely long-term view. A company that invests all of its money will maximize its long-term growth prospects, but if it doesn't hold enough cash, it can't pay its bills and will go out of business soon. Companies thus need to find the right mix between long-term and short-term investment.

The investment decision also concerns what specific investments to make. Since there is no guarantee of a return for most investments, the finance department must determine an expected return. This return is not guaranteed, but is the average return on an investment if it were to be made many times.

The investments must meet three main criteria:

- It must maximize the value of the firm, after considering the amount of risk the company is comfortable with risk aversion.
- It must be financed appropriately.
- If there is no investment opportunity that fills (1) and (2), the cash must be returned to shareholder in order to maximize shareholder value.

(b) Financing decisions:

Once the firm has taken the investment decision and committed itself to new investments, it must decide the best means of financing these commitments. Since, firms regularly make new investments need for financing and financial decisions are ongoing. There are two ways to finance an investment: using a company's own money or by raising money from external funders. Each has its advantages and disadvantages.

There are two ways to raise money from external funders: by taking on debt or selling equity. Taking on debt is the same as taking on a loan. The loan has to be paid back with interest, which is the cost of borrowing. Selling equity is essentially selling part of your company. When a company goes public, for example, they decide to sell their company to the public instead of to private investors. Going public entails selling stocks which represent owning a small part of the company. The company is selling itself to the public in return for money.

Every investment can be financed through company money or from external funders. It is the financing decision process that determines the optimal way to finance the investment.

(c) Dividend decision:

In corporate finance, the dividend decisions are decisions that are made by the directors of a company. The dividend decision relates to the amount and timing of any cash payments made to the company's stockholders. It is a policy that the management formulates in regard to earnings for distribution as dividends among shareholders. The dividend decision in a company determines the division of earnings between payments to shareholders and retained earnings.

The dividend decision is important one for the firm as it may influence its capital structure and stock price. These decisions may also have an impact on the amount of taxation that stockholders pay. A firm's dividend decision is influenced by three main factors. The three factors are

- Free-cash flow,
- Dividend clienteles and
- Information signaling.

Under the first theory of free cash flow theory of dividends, the dividend decision is very simple. Here the firm makes the payment as dividends, any cash that is surplus after it invests in all available positive net present value projects. This theory is criticized because it does not explain the observed dividend policies of real-world companies.

The dividend clienteles is an idea where a particular pattern of dividend payments may suit one type of stock holder more than another. Under this method if the clienteles exist for particular patterns of dividend payments, a firm may be able to maximize its stock price and minimize its cost of capital by catering to a particular clientele. This idea is criticized because the investors do not need to rely upon the firm to provide the pattern of cash flows that they desire.

The third model is information signaling which was developed by Merton Miller and Kevin Rock. This model suggests that dividend announcements convey information to investors regarding the firm's future prospects. This means that when investors have incomplete information about the firm they will look for other information that may provide a clue as to the firm's future prospects.

We have studied above three types of financial decisions that a financial manager has to take. Although these are three different kind of decisions but they are interrelated because the underlying objective of all these decisions is to maximize the shareholder's wealth.

TABLE 1.2



1.8 NATURE OF FINANCIAL MANAGEMENT

In modern times, we cannot imagine a world without the use of money. In fact, money is the life-blood of business in the present day world because all our economic activities are carried out through the use of money. For carrying on business, we need resources which are pooled in terms of money. It is used for obtaining physical and material resources for carrying out productive activities and business operations which affect sales and pay compensation to suppliers of resources, physical as well as monetary. Hence financial management is considered as an organic function of a business and has rightly become an important one. A group of experts defines Financial Management as simply the task of providing funds needed by the business or enterprise on terms that are most favourable in the light of its objectives. The approach, thus, is concerned almost exclusively with the procurement of funds and could be widened to include instruments, institutions and practices through which to raise funds. It also covers the legal and accounting relationship between a company and its sources of funds. Financial Management is certainly broader than procurement of funds and there are other functions and decisions too. Other set of experts assume that finance is concerned with cash. Since every business transaction involves cash directly or indirectly, finance may be assumed to be concerned with everything that takes place in the conduct of a business. Obviously, it is too broad. The third set of people whose point of view has been widely accepted considers Financial Management as procurement of funds and their effective utilisations in the business; though there are other organisations like schools, associations, government agencies etc., where funds are procured and used. So, Financial Management has not only to see that funds can be raised for installing plant and machinery at a cost; but it has also to see that additional profits adequately compensate for the costs and risks borne by the business while setting up the project. Thus, from the point of view of a corporate unit, financial management is related not only to 'fund-raising' but encompasses wider perspective of managing the finances for the company efficiently. In the developed state of a capital market, raising funds is not a problem; the real problem is to put the capital resources to efficient use through effective financial planning, financial organisation and financial control and to deal with tasks like ensuring the availability of funds, allocating them for different uses, managing them, investing funds, controlling costs, forecasting financial requirements, doing profit planning and estimating rate of return on investment and assessment of working capital etc. Financial Management, to be more precise, is, thus concerned with investment, financing and dividend decisions in relation to objectives of the company. Such decisions have to take care of the interests of the shareholders. They are upheld by maximisation of shareholders' wealth which depends upon increase in the net worth of capital invested in the business plus ploughed back profits for growth and prosperity of the company. It is for such reasons that the market is prepared to pay a lower or higher price for the shares of some company or the other. Nature of Financial Management therefore can be judged by the study of the nature of investment, financing and dividend decisions.

1.9 SCOPE OF FINANCIAL MANAGEMENT

Scope of financial management is vast and important to business. It is involve in all level of management and all fields of human activities. Without good financial management, no organization can be alive. Financial management makes his place everywhere. Financial Management involves the application of general management principles to particular financial operation its scope involves:

- 1. Procurement of Short term and long term funds from financial institutions.
- 2. Mobilization of funds through financial instruments such as equity shares, preference shares, debentures shares, bonds, notes and so forth.
- 3. Compliance with legal and regulatory provisions relating to funds procurement, use and distribution as well as coordination of the finance function with accounting function.

The following concepts adequately depict the scope of financial management:

1. Anticipating Financial Requirements: First of all the financial management makes the plans and estimates the business requirements of the firm. For this purpose he uses cash budget proforma income

statement and balance sheet. Cash budget shows the estimated cash inflows, out flows, Income and expenditure of the business. Balance sheet gives a picture of how a firm's assets and liabilities and equity will look at the end of the period.

- 2. Acquiring Financial Resources: After the requirements have been determined the next job of financial management is to be to acquire the needed funds. He can acquire funds from issuing of common or preference shares. He has the option to acquire short term, intermediate term or long term loans from various sources. He will select the source and type of funds according to the requirements of the business and also take care of other considerations like risk, cost of capital and control etc.
- 3. Allocation of Funds: After acquiring funds, the most important job of financial manager is to how these funds allocated among different assets. The assets structure needs proper attention because the business risks related with it. He may invest the funds in low term asset. Short term fixed assets & current assets are called capital budgeting decision. Capital budgeting decisions are much important for a long time and may include very large amount. Investment in current assets is called working capital. Another source of allocating funds is the dividend policy. The form has to pay dividend to its share holders as retain on their investments.

The financial manager is responsible for paying dividend to its share holders without damaging the finance position of the firm.

4. **Proper use of Surpluses :** A judicious use of surpluses is essential for expansion and diversification plan and also in protecting the interest of shareholders. The ploughing back of profits is the best policy of further financing but it clashes with the interests of shareholders.

1.10 OBJECTIVES OF FINANCIAL MANAGEMENT

The financial management is generally concerned with procurement, allocation and control of financial resources of a concern. The objectives of the financial management are as follows:

- 1. **Profit maximization:** The main objective of financial management is profit maximization. The finance manager tries to earn maximum profits for the company in the short-term and the long-term. He cannot guarantee profits in the long term because of business uncertainties. However, a company can earn maximum profits even in the long-term, if:
 - The Finance manager takes proper financial decisions.
 - He uses the finance of the company properly
- 2. Wealth maximization: Wealth maximization (shareholders' value maximization) is also a main objective of financial management. Wealth maximization means to earn maximum wealth for the shareholders. So, the finance manager tries to give a maximum dividend to the shareholders. He also tries to increase the market value of the shares. The market value of the shares is directly related to the performance of the company. Better the performance, higher is the market value of shares and vice-versa. So, the finance manager must try to maximize shareholder's value.
- 3. Proper estimation of total financial requirements: Proper estimation of total financial requirements is a very important objective of financial management. The finance manager must estimate the total financial requirements of the company. He must find out how much finance is required to start and run the company. He must find out the fixed capital and working capital equirements of the company. His estimation must be correct. If not, there will be shortage or surplus of finance. Estimating the financial requirements is a very difficult job. The finance manager must consider many factors, such as the type of technology used by company, number of employees employed, scale of operations, legal requirements, etc.
- 4. **Proper mobilization:** Mobilization (collection) of finance is an important objective of financial management. After estimating the

financial requirements, the finance manager must decide about the sources of finance. He can collect finance from many sources such as shares, debentures, bank loans, etc. There must be a proper balance between owned finance and borrowed finance. The company must borrow money at a low rate of interest.

- 5. Proper utilisation of finance: Proper utilisation of finance is an important objective of financial management. The finance manager must make optimum utilisation of finance. He must use the finance profitable. He must not waste the finance of the company. He must not invest the company's finance in unprofitable projects. He must not block the company's finance in inventories. He must have a short credit period.
- 6. Maintaining proper cash flow : Maintaining proper cash flow is a short-term objective of financial management. The company must have a proper cash flow to pay the day-to-day expenses such as purchase of raw materials, payment of wages and salaries, rent, electricity bills, etc. If the company has a good cash flow, it can take advantage of many opportunities such as getting cash discounts on purchases, large-scale purchasing, giving credit to customers, etc. A healthy cash flow improves the chances of survival and success of the company.
- 7. Survival of company: Survival is the most important objective of financial management. The company must survive in this competitive business world. The finance manager must be very careful while making financial decisions. One wrong decision can make the company sick, and it will close down.
- 8. Creating reserves: One of the objectives of financial management is to create reserves. The company must not distribute the full profit as a dividend to the shareholders. It must keep a part of it profit as reserves. Reserves can be used for future growth and expansion. It can also be used to face contingencies in the future.

- **9. Proper coordination:** Financial management must try to have proper coordination between the finance department and other departments of the company.
- **10. Create goodwill:** Financial management must try to create goodwill for the company. It must improve the image and reputation of the company. Goodwill helps the company to survive in the short-term and succeed in the long-term. It also helps the company during bad times.
- **11. Increase efficiency:** Financial management also tries to increase the efficiency of all the departments of the company. Proper distribution of finance to all the departments will increase the efficiency of the entire company.
- **12. Financial discipline:** Financial management also tries to create a financial discipline. Financial discipline means:-
 - To invest finance only in productive areas. This will bring high returns (profits) to the company.
 - To avoid wastage and misuse of finance.
- **13. Reduce cost of capital:** Financial management tries to reduce the cost of capital. That is, it tries to borrow money at a low rate of interest. The finance manager must plan the capital structure in such a way that the cost of capital it minimised.
- 14. Reduce operating risks: Financial management also tries to reduce the operating risks. There are many risks and uncertainties in a business. The finance manager must take steps to reduce these risks. He must avoid high-risk projects. He must also take proper insurance.
- **15. Prepare capital structure:** Financial management also prepares the capital structure. It decides the ratio between owned finance and borrowed finance. It brings a proper balance between the different sources of capital. This balance is necessary for liquidity, economy, flexibility and stability.

1.11 SUMMARY

To sum up, finance is the life blood of an enterprise and its management is very crucial for success of any organization. Due to its such an importance in an organization Financial Management emerge as a separate subject in the field of management. It involves planning and controlling the finance of the organization in order to achieve its objectives. Financial management can be seen as a process. A process that begins with the financial planning and decisions. While implementing these decisions, the firm has to acquire certain risk and return characteristics. These characteristics determine the market price of shares and shareholders wealth. The system also involves feedback system to enable it to take corrective measures, if required.

1.12 GLOSSARY

- **Financial management:** Financial management refers to that part of the management that is concerned with the planning and controlling of firm's financial resources
- **Personal finance:** personal finance deals with the analysis of principles and practices involved in managing one's own daily need of fund.
- **Finance of non-profit organization:** it is concerned with the procedures and problem involved in financial management of charitable, religious, educational, social and other similar organizations.
- Sole proprietory finance: In such form of organization, a single individual promotes, finances, controls and manage the business enterprise. He also bears the whole risk of business
- **Partnerships firm finance:** It is an association of two or more persons to carry on as co-owners of a business and to share its profits and losses.
- **Current Asset Pricing Model (CAPM) :** A model that describes the relationship between risk and expected return and that is used in the pricing of risky securities.

- Option pricing theory: Any model- or theory-based approach for calculating the fair value of an option. The most commonly used models today are the Black-Scholes model and the binomial model. Both theories on options pricing have wide margins for error because their values are derived from other assets, usually the price of a company's common stock. Time also plays a large role in option pricing theory, because calculations involve time periods of several years and more. Marketable options require different valuation methods than non-marketable ones, such as those given to company employees.
- **Portfolio analysis:** Portfolio analysis is the process of looking at every investment held within a portfolio and evaluating how it affects the overall performance. Portfolio analysis seeks to determine the variance of each security, the overall beta of the portfolio, the amount of diversification and the asset allocation within the portfolio.

The analysis seeks to understand the risks associated with the current composition of the portfolio and identify ways to mitigate the identified risks.

• **Business:** It literally means 'state of being busy'. It involves industry, trade and commerce.

1.13 SELFASSESSMENT QUESTIONS

Q1. What is the meaning and importance of financial management?

Q2.	Explain the various types of financial decisions?		
Q3.	What are the elements of financial management?		
Q4	Explain the evolution of financial management?.		
1.14	LESSON END EXERCISE		
Q.1	Define business finance		

Q.2 Enumerate the objective of financial management.

1.15 SUGGESTED READINGS

- John J., Financial Decision Making: Concept, Problem & cases, Prentice hall
- I.M Pandey, Financial Management, Vikas Publisher
- Shahshi K. Gupta, R.K Sharma ,Financial Planning and Decisions
- Van Horne, financial management and Policy, Pearson
- M.Y Khan, Financial management, Tata McGraw Hill

BASICS OF FINANCIAL MANAGEMENT

UNIT-I

Lesson No. 2

FUNCTIONS OF FINANCE MANAGER AND ITS INTERFACE WITH OTHER FUNCTIONAL AREAS

STURCTURE

- 2.1 Introduction
- 2.2 Objectives
- 2.3 Functions of Finance Manager
- 2.4 Interface of Financial Management with other functional areas
- 2.5 Organisation of finance function
- 2.6 Controller Vs treasurer
- 2.7 Summary
- 2.8 Glossary
- 2.9 Self Assessment Questions
- 2.10 Lesson End Exercise
- 2.11 Suggested Readings

2.1 INTRODUCTION

This unit opens up with the scope of the financial management and contains its objectives and functions. Further it determines the relationship of financial management with other functional areas and its organization in different kind of firms. Financial management is concerned with procurement and use of funds. Its main aim is to use business funds in such a way that the firm's value/earnings are maximised. There are various alternatives available for using these funds. Each alternative course has to be evaluated in detail. The pros and cons of each alternative have to be looked into before making a final decision. The decisions will have to take into consideration the commercial strategy of a business. Financial management provides a framework for selecting a proper course of action and deciding a viable commercial strategy.

2.2 OBJECTIVES:

After you have studied this unit, you should be able to describe

- The scope and objectives of financial management
- The various functions of financial manger
- Relationship of finance function with other functional areas of an organisation
- Organisations of finance function in different types of organisations.

2.3 FUNCTIONS OF FINANCE MANAGER

The changed business environment in the past has widened the role of financial manager. It is the responsibility of financial management to allocate funds to current and fixed assets, to obtain the best mix of financing alternatives, and to develop an appropriate dividend policy within the context of the firm's objectives. These functions are performed on a day-to-day basis as well as through infrequent use of the capital markets to acquire new funds. The daily activities of financial manager include credit management, inventory control, and the receipt and disbursement of funds. Less routine functions encompass the sale of stocks and bonds and the establishment of capital budgeting and dividend plans. The functions of financial manager are as follows:

 Estimation of capital requirements: A finance manager has to make estimation with regards to capital requirements of the company. This will depend upon expected costs and profits and future programs and policies of a concern. Estimations have to be made in an adequate manner which increases earning capacity of enterprise.

- 2. Determination of capital composition: Once the estimation has been made, the capital structure have to be decided. This involves short-term and long- term debt equity analysis. This will depend upon the proportion of equity capital a company is possessing and additional funds which have to be raised from outside parties.
- **3.** Choice of sources of funds: For additional funds to be procured, a company has many choices like
 - a. Issue of shares and debentures
 - b. Loans to be taken from banks and financial institutions
 - c. Public deposits to be drawn like in form of bonds.

Choice of factor will depend on relative merits and demerits of each source and period of financing.

- 4. **Investment of funds:** The finance manager has to decide to allocate funds into profitable ventures so that there is safety on investment and regular returns is possible.
- 5. **Disposal of surplus:** The net profits decision has to be made by the finance manager. This can be done in two ways:
 - a. Dividend declaration It includes identifying the rate of dividends and other benefits like bonus.
 - b. Retained profits The volume has to be decided which will depend upon expansional, innovational, diversification plans of the company.
- 6. Management of cash: Finance manager has to make decisions with regards to cash management. Cash is required for many purposes like payment of wages and salaries, payment of electricity and water bills, payment to creditors, meeting current liabilities, maintainance of enough stock, purchase of raw materials etc.

7. Financial controls: The finance manager has not only to plan, procure and utilize the funds but he also has to exercise control over finances. This can be done through many techniques like ratio analysis, financial forecasting, cost and profit control, etc.

2.4 INTERFACE OF FINANCIAL MANAGEMENT WITH OTHER FUNCTIONALAREAS:

In this section we will try to understand the relationship between financial management and other functional areas of management like production, operations, marketing, personnel, etc. Dear students in the world of management nothing works in isolation. Each and every department is dependent on other for one or the other reason. Same rule applies for financial management also. Finance is the study of money management, the acquiring of funds (cash) and the directing of these funds to meet particular objectives. Good financial management helps businesses to maximize returns while simultaneously minimizing risks.Financial management is an integral part of overall management and not merely a staff function. It is not only confined to fund raising operations but extends beyond it to cover utilization of funds and monitoring its uses. These functions influence the operations of other crucial functional areas of the firm such as production, marketing and human resources. Hence, decisions in regard to financial matters must be taken after giving thoughtful consideration to interests of various business activities. Finance manager has to see things as a part of a whole and make financial decisions within the framework of overall corporate objectives and policies.

There is a close relationship between the finance function on the one hand and production, procurement, marketing, personnel function on the other. Almost all business activities in an organization directly or indirectly involve the acquisition and use of funds. The determination of production, procurement and marketing strategies are the prerogative of the chief of production, purchase and marketing divisions respectively, but for implementing their decisions funds are required. For example, the production department may decide to replace an old machine with a new one to increase the production capacity but it has financial implications too. Similarly, the purchase and sales promotion policies are laid down by the purchase and marketing divisions respectively, but procurement of materials, advertising and other sales promotion activities cannot be carried out without funds. Likewise, the recruitment and promotion of staff is the responsibility of the personnel department but recruitment and promotion of employees require funds for the payment of wages, salaries and other benefits. Many times, it may be difficult to demarcate where the one function ends and other starts. It may, however be noted that although the finance function of raising and using funds has a significant effect on other functions, it need not limit or obstruct the general functions of the business. It is possible that a firm facing financial difficulties may give more weightage to financial considerations and devise its own production and marketing strategies to suit the situation. On the other hand a firm with plenty of funds may not have much rigidity with regard to financial considerations vis-à-vis other management functions. In such a firm, financial policies may be adjusted to the needs of the decisions relating to production, procurement, marketing and other functions.

The relationship between financial management and other functional areas can be defined as follows:

- 1. Financial Management and Production Department: The financial management and the production department are interrelated. The production department of any firm is concerned with the production cycle, skilled and unskilled labor, storage of finished goods, capacity utilisation, etc. and the cost of production assumes a substantial portion of the total cost. The production department has to take various decisions like replacing machinery, installation of safety devices, etc. and all the decisions have financial implications.
- 2. Financial Management and Material Department: The financial management and the material department are also interrelated.

Material department covers the areas such as storage, maintenance and supply of materials and stores, procurement etc. The finance manager and material manager in a firm may come together while determining Economic Order Quantity, safety level, storing place requirement, stores personnel requirement, etc. The costs of all these aspects are to be evaluated so the finance manager may come forward to help the material manager.

- **3. Financial Management and Personnel Department:** The personnel department is entrusted with the responsibility of recruitment, training and placement of the staff. This department is also concerned with the welfare of the employees and their families. This department works with finance manager to evaluate employees' welfare, revision of their pay scale, incentive schemes, etc.
- 4. Financial Management and Marketing Department: The marketing department is concerned with the selling of goods and services to the customers. It is entrusted with framing marketing, selling, advertising and other related policies to achieve the sales target. It is also required to frame policies to maintain and increase the market share, to create a brand name etc. For all this finance is required, so the finance manager has to play an active role for interacting with the marketing department.
- 5. Financial Management and Top Management: The top management, which is interested in ensuring that the firm's long-term goals are met, finds it convenient to use the financial statements as a means for keeping itself informed of the overall effectiveness of the organization. We have so far briefly reviewed the interface of finance with the non-finance functional disciplines like production, marketing etc. Besides these, the finance function also has a strong linkage with the functions of the top management. Strategic planning and management control are two important functions of the top management. Finance function provides the basic inputs needed for undertaking these activities.

2.5 ORGANISATION OF FINANCE FUNCTION

The finance function is very vital for every type of business enterprise. There is a need to set up a sound and efficient organisation to achieve its goals. However, organisation of finance function is not standardized and varies from enterprise to enterprise depending upon its nature, size and other requirements. For example: In a small concern, whose operations are simple and there is little delegation of authority no separate executive is appointed to handle finance function. It is the owner who performs all these functions himself. But in a medium and large scale concern, a separate department to organise all financial activities may be created at top level under the direct supervision of board of directors or highly placed official. The function may be headed by committee or top management executive. All important financial decisions are taken by the committee or the executive but routine decisions are left to the lower levels of management.

The finance function is centralized because of its importance. Any bad decision on financial aspect will adversely affect the reputation of the concern. The centralization of finance function will result in certain economies in raising funds, purchasing of fixed assets, etc. in large concerns, for organizing finance functions, the controller and treasurer are appointed. The organization of finance function may be diagrammatically shown as below:



2.6 CONTROLLER VS TREASURER

The term controller and treasurer are used in the USA for financial executives. Some people use these terms interchangeably however there is a difference between the two. The below table 2.1 lists some of the important functions of the treasurer and controller

S.No.	Treasurer	Controller
1	Provision of capital	Accounting
2	Relations with banks & financial institutions	Preparation of financial reports
3	Cash management	Reporting and interpreting
4	Receivables management	Planning and control
5	Protect funds & securities (insurance)	Internal audit
6	Investor relations	Tax administration
7	Audit	Economic appraisal and reporting to government

TABLE 2.1

However, it may be noted that many times the function of controller and treasurer overlap with each other. In India, controller is generally termed as financial controller or management accountant. But the designation of treasurer has not become popular and some of his functions are performed by company secretary. A large number of companies in India appoint finance managers to discharge the duties of the treasurer or both of the controller and treasurer. Some big companies even appoint the Chief Financial Officer (CFO) to supervise the functions of these two financial executives.

2.7 SUMMARY

Financial Management being a vast subject has a very wide scope which involves estimating financial requirements, deciding capital structure, selecting a source of finance, selecting a pattern of investment, proper cash management, implementing financial controls and proper use of surpluses. Its objective involves procurement, allocation and control of funds. The financial manager has to choose amongst various options available. However, while doing so, he has to ensure that he chooses the one which maximises the shareholders wealth. The finance function doesn't exist in isolation in an organisation. It also works in a relationship with other functional areas of the organization. Further, its organisation varies from firm to firm depending upon various factors like: Size of the firm, its nature, etc. The changed business environment in the recent past has widened the role of a financial manager. The increasing pace of industrialization, rise of large scale units, innovations in information processing, increased competition, etc are some of them.

2.8 GLOSSARY

- **Receivables management:** Receivables, also termed as trade credit or debtors are component of assets. When a firm sells its product in credit, account receivables are created. Account receivable is the money receivable in some future date for the credit sale of goods and services at present. Management of them is known as receivables management.
- **Anticipation:** It is define as the act of anticipating something, that is, expecting or predicting.
- **Capitalization:** In accounting, it is where costs to acquire an asset are included in the price of the asset. The sum of a corporation's stock, long-term debt and retained earnings. Also known as "invested capital". A company's outstanding shares multiplied by its share price, better known as "market capitalization" eg: if a machine has a price of \$1 million this value would be recorded in the assets, if there was also a \$20,000 charge for shipping the machine then this cost would be capitalized and included in assets. The capitalization of a firm can

be overcapitalized and undercapitalized, both of which are potential negatives. If a company has 1,000,000 shares and is currently trading at \$10 a share, their market capitalization is \$10,000,000.

- **Organization:** A social unit of people that is structured and managed to meet a need or to pursue collective goals. All organizations have a management structure that determines relationships between the different activities and the members, and subdivides and assigns roles, responsibilities, and authority to carry out different tasks.
- Globalization: The worldwide movement toward economic, financial, trade, and communications integration. Globalization implies the opening of local and nationalistic perspectives to a broader outlook of an interconnected and interdependent world with free transfer of capital, goods, and services across national frontiers. However, it does not include unhindered movement of labor and, as suggested by some economists, may hurt smaller or fragile economies if applied indiscriminately.
- **Treasurer:** Treasurer is a financial manager whose main function are: cash management, raising of additional funds, receivables management, audit of accounts, protecting land and securities, etc.
- **Controller:** Controller is a financial manager who perform the functions of financial planning and controlling, preparation of annual reports, capital budgeting, profit analysis, etc.
- **CFO:** The senior manager responsible for overseeing the financial activities of an entire company. The CFO's duties include financial planning and monitoring cash flow. He or she analyzes the company's financial strengths and weaknesses and suggests plans for improvement. The CFO is similar to a treasurer or controller in that he or she is responsible for overseeing the accounting and finance departments and for ensuring that the company's financial reports are accurate and completed on time.
- Economic appraisal: It is a type of decision method applied to a project, programme or policy that takes into account a wide range of costs and benefits, denominated in monetary terms or for which a monetary equivalent can be estimated. Economic Appraisal is a key tool for achieving value for money and satisfying requirements for decision accountability. It is a systematic process for examining alternative uses of resources, focusing on assessment of needs, objectives, options, costs, benefits, risks, funding, affordability and other factors relevant to decisions.
- **Objectives:** A specific result that a person or system aims to achieve within a time frame and with available resources. In general, objectives are more specific and easier to measure than goals. Objectives are basic tools that underlie all planning and strategic activities. They serve as the basis for creating policy and evaluating performance. Some examples of business objectives include minimizing expenses, expanding internationally, or making a profit.

2.9 SELFASSESSMENT QUESTIONS

Q1. What are the objectives of financial management?

Q2. What are the functions of the financial manager?

Q3. What is the scope of financial management?

2.10 LESSON END EXERCISE

Q4. Explain the relationship between financial management and other functional areas.

Q5. Explain the organisation of finance function.

Q6. Explain the difference between controller and treasurer.

2.11 SUGGESTED READINGS

- Khan & Jain, Financial management, Tata McGraw Hill
- Prassanna Chandra, Financial Management (Theory and Practice), Tata McGraw Hill, New Delhi.
- Brigham, Financial Management: Text & Cases, Cenage Learning
- G.S Reddy, Financial Management: Principles and Practice, Himalaya Publishing

BASICS OF FINANCIAL MANAGEMENT

UNIT-I

Lesson No. 3

CHALLENGES FACED BY FINANCE MANAGERS IN GLOBALISATION ERA

STRUCTURE

- 3.1 Introduction
- 3.2 Objectives
- 3.3 Buildings Blocks of Modern Finance
- 3.4 Risk Return Trade off
- 3.5 Organisation of the Finance Function
- 3.6 Relationship of Finance to Economics and Accounting
- 3.7 Emerging Role of the Financial Manager in India
- 3.8 Challenges Faced by Finance Managers in Globalisation Era
- 3.9 Summary
- 3.10 Glossary
- 3.11 Self Assessment Questions
- 3.12 Lesson End Exercise
- 3.13 Suggested Readings

3.1 INTRODUCTION

Finance is regarded as the life blood of business. It is of vital significance for modern business which requires huge capital.

Funds required for a business may be classified as long term and short term. They are required for purchasing fixed assets like land and building, machinery etc and meeting day to day expenses of the firm. In today's highly competitive market, financial managers are exposed to a number of challenges imposed by their respective internal and external environments. They have to make decisions regarding various organisational issues. Decision about various sources of funds should be linked to cost of raising funds. If cost of rising funds is high, then such sources may not be useful. A decision about the kind of the securities to be employed and the proportion in which these should be used is an important decision which influences the short term and the long term planning of the enterprise. When fund have been procured then a decision about investment pattern is to be taken. The selection of investment pattern is related to the use of the funds. A decision has to be taken as to which assets are to be purchased? The fund will have to be spent first. Fixed asset and the appropriate portion will be retained for the working capital. The decision making techniques such as capital Budgeting, opportunity cost analysis may be applied in making decision about capital expenditures. While spending in various assets, the principles of safety, profitability, and liquidity should not be ignored. Cash management is an important task of financial manager. He has to assess the various cash needs at different times and then make arrangements for arranging cash. Cash may be required to make payments to creditors, purchasing raw material, meet wage bills, and meet day to day expenses. The sources of cash may be Cash sales, Collection of debts, Short-term arrangement with the banks. The cash management should be such that neither there is shortage of it and nor it is idle. Any shortage of cash will damage the creditworthiness of the enterprise. The idle cash with the business mean that it is not properly used.

3.2 OBJECTIVES

After studying this lesson, you will be able to:

• explain the building blocks of modern finance;

- identify the relationship of finance to accounting and economics
- define risk return trade off
- explain the challenges faced by finance managers

3.3 BUILDING BLOCKS OF MODERN FINANCE

While corporate finance emerged as a distinct field of study at the turn of 20th century, the literature on corporate finance through the early 1950s consisted largely of adhoc theories and institutional detail, but little of systematic analysis. The Financial Policy of Corporations by Arthur S. Dewing, published in 1919, was the major textbook on corporate finance for generations. It focused primarily on certain episodic events like formation, issuance of capital, major expansion, mergers, reorganisaton, and liquidation in the life cycle of a firm and discussed them mainly in descriptive and institutional terms. Prior to the 1950s, corporate finance theory was riddled with inconsistencies and had a predominantly prescriptive orientation. Likewise, the theory of financial markets in 1950s was as undeveloped as the theory of corporate finance.

In the 1950s, fundamental changes began to occur in the field of finance. The analytical methods and techniques of economics began to be applied to problems in finance, resulting in a major transformation. This evolution was accompanied by a change from the normative to the positive. The focus shifted from questions such as "What should the investment, financing, and dividend policies of the firm be?" to questions such as "What are the effects of alternate investment, financing, or dividend policies on the value of the firm?" This shift was essential to provide a scientific basis for formulating corporate policy decisions.

It must be recognised that a richer set of positive theories provides the basis for answering normative questions. This important relation between positive and normative theories is often not realised. Purposeful decisions are founded on an explicit or implicit use of positive theories. To decide what action you should take to meet your objective, you should know how the alternative actions affect the desired outcome - and this is what a positive theory does. For example, to choose among alternative financial structures you should know how the alternatives affect expected cash flows, risk, and therefore the firm value. If you use incorrect positive theories, your decisions would have unexpected and undesirable outcomes. The years since the early 1950s have witnessed the development of the following major building blocks of modern financial economics:

Efficient markets theory: Analysis of how prices change over time in speculative

- **Portfolio theory**: Formation of an optimal portfolio of securities.
- **Capital asset pricing theory**: Determination of asset prices under conditions of uncertainty.
- **Option pricing theory:** Determination of the prices of contingent claims such as call
- Agency theory: Analysis of incentive conflicts in contractual relations.

Apart from the above building blocks, which form the core of the neoclassical finance, another major development that has a bearing on financial decisions is behavioural finance. Unlike neoclassical finance which assumes that people are rational, behavioural finance considers social, cognitive, and emotional factors that influence decisions and examines their effects on market prices, returns, and allocation of resources.

3.4 RISK RETURN TRADE OFF

Financial decisions often involve alternative courses of action. Should the firm set up a plant which has a capacity of one million tons or two million tons? Should the debt-equity ratio of the firm be 2:1 or 1:1? Should the firm pursue a generous credit policy or niggardly credit policy? Should the firm carry a large inventory or a small inventory? The alternative courses of action typically have different risk-return implications. A large plant may have a higher expected return and a higher risk exposure, whereas a small plant may have a lower expected return and a lower risk exposure. A higher debt-equity ratio, compared to a lower debt-equity ratio, may save taxes but expose the firm to greater risk. A 'hot' stock, compared to a defensive stock, may offer a higher expected return but also a greater possibility of loss.

In general, when you make a financial decision, you have to answer the following questions:

What is the expected return? What is the risk exposure? Given the risk-return characteristics of the decision, how would it influence value? Exhibit 3.1 shows schematically the relationship between the key financial decisions, return, risk, and market value.



Exhibit 3.1 Decisions, Return, Risk and Market Value

3.5 ORGANISATION OF THE FINANCE FUNCTION

Financial management is in many ways an integral part of the jobs of managers who are involved in planning, allocation of resources, and control. The responsibilities for financial management are dispersed throughout the organisation. For example:

- The engineer, who proposes a new plant, shapes the investment policy of the firm.
- The marketing analyst provides inputs in the process of forecasting and planning.
- The purchase manager influences the level of investment in inventories.
- The sales manager has a say in the determination of the receivables policy.
- Departmental managers, in general, are important links in the financial control system of the firm.

There are, however, many tasks of financial management and allied areas (like accounting) which are specialised in nature and which are attended to by specialists. These tasks and their typical distribution between the two key financial officers of the firm, the treasurer and the controller", are shown in Exhibit 3.2. It must be kept in mind that the treasurer is responsible mainly for financing and investment activities and the controller is concerned primarily with accounting and control.

Treasurer	Controller		
Obtaining finance	Financial accounting		
Banking relationship	Internal auditing		
Cash management	Taxation		
Credit administration	Management accounting		
Capital budgeting	and control		

Exhibit 3.2 Functions of the Treasurer and the Controller

Typically, the chief finance officer, who may be designated as Director (Finance) or Vice President (Finance), supervises the work of the treasurer and the controller. In turn, these officers are assisted by several specialist managers working under them. The finance function in a large organisation may be organised as shown in Exhibit 3.3.

The financial officers, in addition to their specialised responsibility, have significant involvement in injecting financial discipline in corporate management processes. They are responsible for emphasising the need for rationality in the use of funds and the need for monitoring the operations of the firm to achieve desired financial results. In this respect, the tasks of financial officers have assumed new dimensions. Instead of just looking after routine financing and accounting activities, they guide and participate in the tasks of planning, funds allocation, and control so that the financial point of view is sufficiently emphasised in the process of corporate management.



Exhibit 3.3 Organisation of Finance Function

3.6 RELATIONSHIP OF FINANCE TO ECONOMICS AND ACCOUNTING

Financial management has a close relationship to economics on the one hand and accounting on the other. Relationship to Economics There are two important linkages between economics and finance. The macroeconomic environment defines the setting within which a firm operates and the microeconomic theory provides the conceptual underpinning for the tools of financial decision making.

Key macroeconomic factors like the growth rate of the economy, the domestic savings rate, the role of the government in economic affairs, the tax environment, the nature of external economic relationships, the availability of funds to the corporate sector, the rate of inflation, the real rate of interest, the market risk premium, and the terms on which the firm can raise finances define the environment in which the firm operates. No financial manager can afford to ignore the key developments in the macroeconomic sphere and the impact of the same on the firm.

While an understanding of the macroeconomic developments sensitises the financial manager to the opportunities and threats in the environment, a firm grounding in microeconomic principles sharpens his analysis of decision alternatives. Finance, in essence, is applied microeconomics. For example, the principle of marginal analysis - a key principle of microeconomics according to which a decision should be guided by a comparison of incremental benefits and costs - is applicable to a number of managerial decisions in finance.

To sum up, a basic knowledge of macroeconomics is necessary for understanding the environment in which the firm operates and a good grasp of microeconomics is helpful in sharpening the tools of financial decision making. Relationship to Accounting The finance and accounting functions are closely related and almost invariably fall within the domain of the chief financial officer. Given this affinity, it is not surprising that in popular perception finance and accounting are often considered indistinguishable or at least substantially overlapping. However, as a student of finance you should know how the two differ and how the two relate. The following discussion highlights the differences and relationship between the two.

- a. Score Keeping vs. Value Maximising Accounting is concerned with score keeping, whereas finance is aimed at value maximising. The primary objective of accounting is to measure the performance of the firm, assess its financial condition, and determine the base for tax payment. The principal goal of financial management is to create shareholder value by investing in positive net present value projects and minimising the cost of financing. Of course, financial decision making requires considerable inputs from accounting. As Gitman says: "The accountant's role is to provide consistently developed and easily interpreted data about the firm's past, present, and future operations. The financial manager uses these data, either in raw form or after certain adjustments and analyses, as an important input to the decision making process."
- **b.** Accrual Method vs. Cash Flow Method The accountant prepares the accounting reports based on the accrual method which recognises revenues when the sale occurs (irrespective of whether the cash is realised immediately or not) and matches expenses to sales (irrespective of whether cash is paid or not). The focus of the financial manager, however, is on cash flows. He is concerned about the magnitude, timing, and risk of cash flows as these are the fundamental determinants of values.

c. Certainty vs. Uncertainty Accounting deals primarily with the past. It records what has happened. Hence, it is relatively more objective and certain. Finance is concerned mainly with the future. It involves decision making under imperfect information and uncertainty. Hence, it is characterised by a high degree of subjectivity.

3.7 EMERGING ROLE OF THE FINANCIAL MANAGER IN INDIA

Until the early 1990s, the financial manager in India functioned in a highly regulated environment and enjoyed limited freedom in designing key financial policies. From the early 1990s, however, the complexion of the economic and financial environment has changed in many ways. The important changes have been as follows.

- a. The industrial licensing framework has been substantially relaxed, leading to considerable expansion in the scope of private sector investment.
- b. The Monopolies and Restrictive Trade Practices Act has been virtually abolished and the Foreign Exchange Management Act has been considerably liberalised.
- c. Freedom has been given to companies in designing and pricing the securities issued by them.
- d. The system of cash credit has been largely replaced by a system of working capital loans.
- e. Stable and administered interest rates have given way to volatile and market-determined interest rates. Exchange rates, too, have become more volatile and market-determined. The scope for foreign direct investment has expanded considerably and foreign portfolio investment has assumed great significance.
- f. Investors have become more discerning, demanding, and assertive.

- g. The pace of mergers, acquisitions, and restructuring has intensified.
- h. Derivative instruments such as options and futures have been introduced.

Thanks to these changes, the job of the financial manager in India has become more important, complex, and demanding. More so in the wake of global competition, technological developments, volatile financial prices, economic uncertainty, tax law changes, ethical concerns over financial dealings, and shareholder activism.

3.8 CHALLENGES FACED BY FINANCE MANAGERS IN GLOBALISATION ERA

The key challenges faced by financial manager in today's highly competitive environment are as follows:

a. Investment planning

The primary goal of a manager is to maximise the value of his firm. Value depends on the stream of cash flows generated by the firm in future. How can a manager decide which actions are likely to increase cash flows? How can an investor estimate future cash flows? For answering these questions, it is essential to study the financial statements of firm. Managers, shareholders, creditors and other interested groups seek answers to the following important questions about a firm:

- What is the financial position of the firm at a given point of time?
- How has the firm performed financially over a given period of time?
- What have been the sources and uses of cash over a given period of time?

To answer the above questions, the accountant prepares two principal statements, the balance sheet and the profit and loss account and an ancillary statement, the cash flow statement. The balance sheet shows the financial position (or condition) of the firm at a given point of time. It provides a snapshot and may be regarded as a static picture. The profit and loss account reflects the performance of the firm over a period of time. Finally, the cash flow statement displays the sources and uses of cash during the period. Financial statements serve important functions: (a) They provide information on how the firm has performed in the past and what is its current financial position, (b) They are a convenient device for the stakeholders (shareholders, creditors, regulators, and others) to set performance norms and impose restrictions on the management of the firm.(c) They provide convenient templates for financial forecasting and planning.

Financial statements are often an important source of information for financial decisions. Our emphasis is not on preparing financial statements—which is the job of accountants—but on understanding the kind of information found in these statements.

b. Financial structure

Once amanager has decided on the investment projects it wants to undertake, he has to figure out ways and means of financing them. The key issues in capital structure decision are: What is the optimal debt-equity ratio for the firm? Which specific instruments of equity and debt finance should the firm employ? Which capital markets should the firm access? When should the firm raise finances? At what price should the firm offer its securities? An allied issue is the distribution policy of the firm. What is the optimal dividend payout ratio for the firm? Should the firm buyback its own shares?

Capital structure and dividend decisions should be guided by considerations of cost and flexibility, in the main. The objective should be to minimise the cost of financing without impairing the ability of the firm to raise finances required for value creating investment projects.

c. Mergers, acquisitions, and restructuring

Mergers, acquisitions, and restructuring have become a major force in the financial and economic environment all over the world. Essentially an American phenomenon till the mid- 1970s, they have become a dominant global business theme since then. As David Sinclair put it: "It was once thought that states too sophisticated to fight each other would make war through sport. They do not. The real international battle ground these days is the boardroom. The weapon is takeover."

On the Indian scene, too, corporates are seriously looking at mergers, acquisitions, and restructuring which have indeed become the order of the day. Most of the business groups and their companies seem to be engaged in some kind of corporate restructuring or the other. From the house of Tata to the house of AV Birla, from an engineering giant like Larsen & Toubro to a banking behemoth like State Bank of India, everyone seems to be singing the anthem of corporate restructuring. The pace and intensity of corporate restructuring has increased since the beginning of the liberalisation era, thanks to greater competitive pressures and a more permissive environment.

Mergers, acquisitions, and restructuring evoke a great deal of public interest and perhaps represent the most dramatic facet of corporate finance. They are the stuff of headlines in financial press and often receive a lot of attention as the drama characterising them unfolds.



i. Acquisitions - Acquisition, a broad term, inter alia, subsumes the following transactions:

Merger : A merger refers to a combination of two or more companies into one company. It may involve absorption or consolidation. In an absorption, one company acquires another company. For example, Hindustan Lever Limited absorbed Tata Oil Mills Company. Digital Equipment Corporation was absorbed by Compag after it was acquired in 1997. In a consolidation, two or more companies combine to form a new company. For example, Hindustan Computers Limited, Hindustan Instruments Limited, Indian Software Company Limited, and Indian Reprographics Limited combined to form HCL Limited. Citigroup was the firm created when Citicorp and Traveler's Group consolidated. In India, mergers, called amalgamations in the legal parlance (hereafter we shall use the terms mergers and amalgamations interchangeably) are usually of the absorption variety. The acquiring company (also referred to as the amalgamated company or the merged company) takes over the assets and liabilities of the acquired company (also referred to as the amalgamating company or the merging company or the target company). Typically, the shareholders of the amalgamating company receive shares of the amalgamated company in exchange for their shares in the amalgamating company.

- **Purchase of Division or Plant**: A company mayacquire a division or plant of another company. For example, SRF India bought the nylon cord division of CEAT Limited. Typically, the acquiring company acquires the assets and takes over the liabilities of the concerned division and it pays cash compensation to the selling company. For example, Abbott Laboratories acquired the pharmaceuticals business of Piramal Fiealth Care for \$3.72 billion. Note that in a transaction of this kind only a portion of the assets and liabilities of one company are takenover by another company.
- **Takeover**: A takeover generally involves the acquisition of a certain stake in the equity (usually between 50 percent and 100 percent) capital of a company which enables the acquirer to exercise control over the affairs of the company. For example, FUNDALCO took over INDAL by acquiring a 54 percent stake in INDAL from its overseas parent, Alcan. Subsequently, however, INDAL was merged into HINDALCO. Unlike a merger or purchase of division, a takeover does not involve transfer of assets and liabilities.
- Leveraged Buyout: A leveraged buyout is a variant of takeover or purchase of a division, effected substantially with the help of debt finance.

ii. Divestitures: While acquisitions lead to expansion of assets or increase of control, divestitures result in contraction of assets or relinquishment of control. The common forms of divestitures are briefly described below:

- **Partial Selloff**: A partial selloff involves the sale of a business division or plant of one company to another. It is the mirror image of a purchase of a business division.
- Sale of Equity Stake: In a sale of equity stake, one investor (or a group of investors) sells an equity stake, usually representing a controlling block, to another investor. For example, Alcan sold its 54 percent equity stake in INDAL to HINDALCO. This transaction is a mirror image of a takeover.

- **Demerger**: A demerger involves the transfer by a company of one or more of its business divisions to another company which is newly set up. For example, the Great Eastern Shipping Company transferred its offshore division to a new company called The Great Offshore Limited. The company whose business division is transferred is called the demerged company and the company to which the business division is transferred is called the resultant company.
- Equity Carveout: In an equity carveout, a parent company sells a portion of its equity in a wholly owned subsidiary. The sale may be to the general investing public or a strategic investor.
- **PSU Disinvestment:** Privatisation involves transfer of ownership (represented by equity shares), partial or total, of public enterprises from the government to individuals and non-government institutions.

d. Working capital management

Working capital management, also referred to as short-term financial management, refers to the day-to-day financial activities that deal with current assets (inventories, debtors, short-term holdings of marketable securities, and cash) and current liabilities (short-term debt, trade creditors, accruals, and provisions). The key issues in working capital management are: What is the optimal level of inventory for the operations of the firm? Should the firm grant credit to its customers and, if so, on what terms? How much cash should the firm carry on hand? Where should the firm invest its temporary cash surpluses? What sources of short-term finance are appropriate for the firm?

e. Performance management

The performance measurement system of a firm has a strong influence on the behaviour of its people. As Robert W Hall says: "Performance measurement is the basis of every system in a company: cost systems, planning systems, capital budgeting systems, personnel assignments, promotions, reorganisations, budget allocations -the mechanisms, built up over years, by which everything runs." In a similar vein, Robert Kaplan and David Norton argue: "An organisation's measurement system strongly affects the behaviour of people both inside and outside the organisation. If companies are to survive and prosper in information age competition, they must use measurement and management systems derived from their strategies and capabilities."

More that 70 percent of those who responded to an Economist Intelligence Unit – KPMG survey said that they were dissatisfied with their company's performance measurement system. Some of the problems with the performance measurement systems are as follows:

- An excessive focus on operational and financial measures most of which are tactical and historical.
- A tendency to measure wrong or irrelevant things, just because they are easy to measure.
- Lack of proper alignment of measures either with each other or the strategy of the firm.

In an interesting 1991 HBR paper titled "The Performance Measurement Manifesto," R.G.Eccles argued that "within the next five years, every company will have to redesign how it measures its business performance". The heightened interest in business performance measurement since the early 1990s suggests that he made an important point.

f. Risk management

Since the early 1970s financial prices have become more volatile. This has had a detrimental impact on a number of firms which were ill prepared for unexpected price shifts. Initially firms responded to volatility in financial prices—interest rates, exchange rates, commodity prices, and equity prices—by resorting to forecasting. However, forecasters in general flunked. This is not surprising because in efficient markets—and financial markets in general seem to be characterised

by a high degree of efficiency—price changes will be random. This means that there is no way to accurately predict future prices.

Since forecasting did not address the problem of financial price risk, firms looked for other methods. The financial market responded to this need by developing a range of risk management products like forwards, futures, swaps, and options. Many firms now use financial derivatives to tailor their exposures to currency, interest rate, and commodity price risks. However, risk management (which may be more appropriately called risk-reward management or value management) can be accomplished, in many cases, through the use of real options.

g. Investor relations

The public limited company, which is owned by a number of shareholders protected with limited liability, has been a major organisational innovation. It allows for efficient sharing of risk among many investors and enables professional managers to run the company. However, the public limited company gives rise to possible conflicts between managers and shareholders due to the separation of ownership and control. Adam Smith had recognised, very perceptively, the agency problem in his classical work The Wealth of Nations published in 1776:

"Like the stewards of a rich man, they (managers) are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it. Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company."

Two centuries later, Michael Jensen and William Meckling provided a formal analysis of the 'agency problem' in their seminal paper titled "Theory of the Firm: Managerial Behaviour, Agency Costs, and Ownership Structure," published in the August 1976 issue of The Journal of Financial Economics. The essence of agency problem is that self-interested managers may squander corporate resources over uneconomic, value-destroying projects and activities. This problem is more serious in companies that have substantial free cash flows (free cash flows represent the excess of internal accruals over what is required to undertake profitable NPV – positive projects). Free cash flows tend to be high in mature industries with limited growth projects. On the other hand, in high growth industries where internal accruals are less than what is needed for supporting profitable investment opportunities, managers are less likely to squander resources over uneconomic projects.

To conclude, we can say that a manager should strive to maximise the value of his firm. To achieve this goal, he must understand how businesses are organised, how the financial system functions, what the tax code is, and how accounting information is used to assess business performance. In addition, he must be familiar with the fundamentals of the time value of money, risk and return relationship, and valuation of securities and derivative instruments. This background helps in making decisions that have a bearing on the value of the firm's securities.

3.9 SUMMARY

The three broad areas of financial management are capital budgeting, capital structure, and working capital management. The primary goal of financial management is to maximise the value of the firm. A business proposal augments the value of the firm if its net present value is positive. The important forms of business organisation are the sole proprietorship, the partnership firm, the private limited company, and the public limited company. From the point of view of shareholder wealth maximisation, the public limited company form appears to be the most appropriate. The major building blocks of financial economics are efficient markets theory, portfolio theory, capital asset pricing theory, option pricing theory, agency theory, and behavioural finance. The lack of perfect alignment between the interests

of managers and shareholders results in the agency problem. To mitigate this problem, effective monitoring has to be done and appropriate incentives have to be offered.

Financial management is an integral part of the job of managers. There are, however, many tasks of financial management and allied areas (like accounting), which are specialised in nature and attended to by key financial officers, like the treasurer and the controller. A basic knowledge of macroeconomics is necessary for understanding the environment in which the firm operates and a good grasp of microeconomics is helpful in sharpening the tools of financial decision making. Financial decision making requires considerable inputs from accounting. Since the early 1990s the complexion of the economic and financial environment has altered in many ways, making the job of the financial manager more important, complex, and demanding.

3.10 GLOSSARY

- Equity: represent the ownership funds of the company and are permanent to the capital structure of the firm. The equity can be private or public.
- **Bonds** : are debt instruments involving two parties- the borrower and the lender.
- **Term loans:** are borrowings made from banks and financial institutions. Such term loans may be for the medium to long term with repayment period ranging from 1 to 30 years.
- **Long Term Finance**: The funds which are not paid back within a period of less than a year are referred to as long term finance.
- Internal accruals: are nothing but the reserve of profits or retention of earnings that the firm has created over the years. They represent one of the most essential sources of long term finance since they are not injected into the business from external sources. Rather it is self-

generated and highlights the sustainability and profitability of the entity Also internal accruals are owner's funds and therefore create no charge on the assets of the company.

3.11 SELF ASSESSMENT QUESTIONS

1. What forces are prodding companies in India to accord greater ` importance to the goal of shareholder wealth maximisation?

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

3. Describe briefly the building blocks of modern finance.

4. Why is there a separation of ownership and management in large companies?

3.12 LESSON END EXERCISE

 "Financial management is in many ways an integral part of the jobs of managers." Comment.

2. How is the finance function typically organised in a large company?

3. Discuss the relationship of financial management to economics and accounting.

Explain	the various	challenge	s faced by	financial	manager.

3.13 SUGGESTED READINGS

- I.M.Pandey, Financial Management, Vikas Publisher.
- M.Y.Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

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BASICS OF FINANCIAL MANAGEMENT

UNIT-1 Lesson No. 4 CRITICAL APPRAISAL OF DIFFERENT SECURITIES AS SOURCES OF FINANACE; FINANCIAL PLANNING AND FORECASTING; CONCEPT, TYPES AND TECHNIQUES OF FINANCIAL ANALYSIS

STRUCTURE

- 4.1 Introduction
- 4.2 Objectives
- 4.3 Securities traded in financial markets
- 4.4 Critical appraisal of different securities as a source of finance
- 4.5 Financial planning and forecasting
- 4.6 Proforma profit and loss account
- 4.7 Proforma balance sheet
- 4.8 Key growth rate
- 4.9 Concept of financial analysis
- 4.10 Significance of financial analysis
- 4.11 Objectives of financial analysis
- 4.12 Types and techniques of financial analysis
- 4.13 Problems in financial analysis
- 4.14 Guidelines for financial analysis

- 4.15 Qualitative factors relevant for evaluating the performance and prospects of a company
- 4.16 Summary
- 4.17 Glossary
- 4.18 Self Assessment Questions
- 4.19 Lesson end exercise
- 4.20 Suggested readings

4.1 INTRODUCTION

Finance is regarded as the life blood of business. It is of vital significance for modern business which requires huge capital. Funds required for a business may be classified as long term and short term. You have learnt about short term finance in the previous lesson. Finance is required for a long period also. It is required for purchasing fixed assets like land and building, machinery etc. Financial market is an organised trading platform for exchanging financial instruments under a regulated framework. The participants of the financial markets are borrowers (issuers of financial instruments or securities), lenders (investors or buyers of financial instruments) and financial intermediaries that facilitate investment in financial instruments or securities. The financial markets comprise two markets - (a) Money markets, which are regulated by the Reserve Bank of India (RBI) and (b) Capital markets, which are regulated by the Securities Exchange Board of India (SEBI), etc. The process of economic reforms and liberalisation was set in motion in the mid-eighties and its pace was accelerated in 1991 when the economy suffered severely from a precariously low foreign exchange reserve, burgeoning imbalance on the external account, declining industrial production, galloping inflation and a rising fiscal deficit. The economic reforms, being an integrated process, included deregulation of industry, liberalisation in foreign investment, regime, restructuring and liberalization of trade, exchange rate, and tax policies, partial disinvestments of government holding in public sector companies and financial sector reforms. The reforms in the real sectors such as trade, industry and fiscal policy were initiated first in order to create the necessary macroeconomic stability for launching financial sector reforms, which sought to improve the functioning of banking and financial institutions (FIs) and strengthen money and capital markets including securities market.

4.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain the purpose and types of securities as sources of finance;
- explain types and techniques of financial analysis
- compare financial planning and forecasting

4.3 SECURITIES TRADED IN FINANCIAL MARKETS

Each type of security tends to have specific return and risk characteristics. The term risk is used here to represent the uncertainty surrounding the expected return. The more uncertain the expected return, the greater the risk is. When investors have funds available for one year, for example, they can purchase one year treasury securities know exactly what return they will receive on their investment. Alternatively, they can attempt to earn higher returns by investing in debt securities issued by firms, but there is a risk that they will never receive payments if those firms go bankrupt. Equity securities are also risky because their values depend on the future performance of the firm that issued them.

Investors differ with respect to the risk they are willing to incur, the amount of liquidity they desire and their tax status, making some types of securities more desirable to some investors than to others. Normally, investors attempt to balance the objective of high return with their particular preference for low risk and adequate liquidity. Some investors are much more willing than others to invest in risky securities, as long as the potential return is sufficiently high. Securities can be classified as money market securities, capital market securities or derivatives securities:

I. Money Market Securities

Money market securities are debt securities that have a maturity of one year or less. They generally have a relatively high degree of liquidity. Money market securities tend to have a low expected return but also a low degree of risk. Common types of money market securities include treasury bills (issued by the treasury), commercial paper (issued by the corporations) and negotiable certificates of deposits (issued by depository institution).

II. Capital Market Securities

Securities with a maturity of more than one year are called capital market securities. Capital market securities are commonly issued to finance the purchase of capital asset such as buildings, equipment or machinery. Three common types of capital market securities are bonds, mortgages and stocks.

a. Bonds: Bonds are long term debt securities issued by corporations and governments agencies to support their operations. They provide a return to investors in the form of interest income (coupon payments) every six months. Since bonds represent debt, they specify the amount and timing of interest and principal payments to investors who purchases them. At maturity investors holding the debt securities are paid the principal. Debt securities can be sold in the secondary market if investors do not want to hold them until maturity. Since the prices of debt securities change overtime, they may be worthless when sold than when they were purchased.

Some debt securities are risky because the issuer could default on its obligation to repay the debt. Under these circumstances, the debt security will not provide the entire amount of coupon payments and principal that was promised. Long term debt securities tend to have a higher expected return than money market securities, but they have more risk as well.

- **b.** Mortgages: Mortgages are long term debt obligations created to finance the purchase of real estate. Some mortgages are riskier than others. Lenders try to assess the likelihood of loan repayment using various criteria such as, borrower's income level relative to the value of the home. They offer prime mortgages to borrowers who qualify based on these criteria. Subprime mortgages are offer to some borrowers who do not have sufficient income to qualify for prime mortgages or are enabled to make a down payment. The subprime mortgages exhibit a higher risk of default and therefore the lenders providing the mortgages charge a higher interest rate and additional upfront fees to compensate for the higher level of risk.
- c. Stocks: Stocks (also referred to as equity securities) represent partial ownership in the corporation that issued them. They are classified as capital and market securities because they have no maturities and therefore serve as a long term source of funds. Some corporations provide income to the stakeholders by distributing a portion of their quarterly earnings in the form of dividends. Other corporations retain and reinvest all of their earnings which allow them more potential for growth.

III. Derivatives Securities

In addition to money market and capital market securities, derivatives securities are also traded in financial markets. Derivative securities are financial contracts whose values are derived from the values of the underlines assets. Many derivative securities enable investors to engage in speculation and risk management.

a. Speculation: Derivatives securities allow an investor to speculate on movements in the value of the underlying assets without having to purchase those assets. Some derivatives securities allow investors to benefit from an in the value of underlying assets whereas others allow investors to benefit from a decrease in the assts value. Investors who speculate in derivative contracts can achieve higher returns than if

they had speculated in the underlying assets, but they are also exposed to higher risks.

b. Risk Management: Derivative securities can be used in a manner that will generate gains if the value of the underlying assets declines. Consequently, financial institutions and other firms can use derivatives securities to adjust the risks of their existing investment in securities. If a firm maintains investments in bonds, for example, it can take specific positions in derivative securities that will generate gains if bond values decline. In this way, derivatives securities can be used to reduce firm's risk. The loss on the bonds is offset by the gains on these derivatives securities.

4.4 CRITICAL APPRAISAL OF DIFFERENT SECURITIES AS A SOURCE OF FINANCE

The financial markets are the centre that made provisions for buying and selling of financial claims and services. In India, the financial markets are the combination of money market and capital market. Money market refers to short term finance with a period of maturity of one year or less. It deals with relatively liquid and quickly marketable assets. Capital market is a market for long term securities. It contains financial instruments of maturity period exceeding one year.

I. Money Market

The money market forms an important part of financial system by providing an avenue for equilibrating the surplus funds of lenders and the requirements of borrowers for short periods ranging from overnight up to a year. It also provides a focal point for central bank's intervention for influencing the liquidity in the financial system and thereby transmitting the monetary policy impulses. A money market is basically a mechanism through which short term funds are loaned and borrowed and through which a large part of financial transactions of a particular country or of the world are cleared. Broadly conceived, it includes the entire mechanism employed in financial business of all types. In the narrower sense, in which the term is generally used, however, a money market includes only dealings in more or less standardized types of loans, such as call loans and in credit instruments, such as acceptance and treasury bills, in which personal relations between lender and borrower are of negligible importance. In the sense, money market is distinct from, but supplementary to commercial banking system. Traditionally, the money market in India comprised mainly the call market. Although other money market segments, viz., commercial bills market and inter corporate deposits market have been in existence for a long time, there has not been much activity in these segments. Therefore, for assessing the impact of reforms on the money market the focus is mainly on the call money market. The impact of reforms is assessed in terms of behaviour of the call money market growth related parameters, including those instruments, which were introduced in the 1990s.

In India, the money market is composed of two categories of financial agencies: Organised sector and Unorganised sector.

The Organised Sector: The organised sector contains wella. established, scientifically managed, financial institutions. In the organised markets, there are standardised rules and regulations governing their financial dealings. There is also a high degree if institutionalisation and instrumentalisation. At the apex, there is Reserve Bank of India, which is the lender of the money market and controls the banking sector. Organised markets are subject to strict supervision and control by the RBI or other regulatory bodies. The organised sector of the money market consists of the Reserve bank of India, commercial banks, large sized joint stock companies lending money, financial intermediaries such as the Life Insurance, Credit and investment Corporation of India, the Unit Trust of India, the Agricultural Refinance and Development Corporation, Land Mortgages Banks, Cooperative Banks, Insurance Companies, etc. and call loan brokers, general finance brokers and stock brokers. The joint

stock commercial banks are of two types: Scheduled and Non Scheduled. The organised sector of the Indian money market is comparatively well developed in terms of organised relationships and specialisation of functions.

- **b.** Unorganised Sector: The unorganised sector contains agencies which have diverse policies, lack of uniformity and consistency in the lending business. The unorganised sector of money market contains different agencies. These agencies do not follow uniformity in lending activities. The term unorganised money market conveys the impression that indigenous agencies providing credit have neither any system nor any organisation among themselves, nor any definite procedure regulating their lending practice. In fact, these agencies have been functioning for ages in almost all of our country, have a time-tested organisation. They follow well set patterns, both as regards their lending policies and their interest rates. The unorganised sector of Indian money market includes the following:
 - i. Indigenous Bankers: The indigenous bankers are the part of unorganised Indian money market. It is mostly confined to certain castes like chatries, jains, marwaris and chettis. They are known as banking cast in India. There were about 2,500 indigeneous bankers in the country in 1971. They are active in commercial centres.

The Indian Central Banking Enquiry Committee defined the indigenous banker as "any individual or private firm receiving deposits and dealing in Hundis or lending money. The indigenous bankers have concentrated mostly in the southern and western parts of India. They have been active in rural money market.

ii. Money Lenders: In the unorganised money market sector, the money lenders play an important role in the economy. The money lenders are those whose primary business is money lending the indigenous bankers also does this money lending but their primary business is not banking. The money lenders can be classified as

professional money lenders and non professional money lenders. Professional money lenders' basic business is money lending. They are known as "banias", "mahajans, "sowcars". They hold licenses for money lending activities. Their main source of income is lending money. Non-Professional money lenders mean occasionally they do money lending business. They do not depend entirely on money lending business. They do this business in addition to their routine work. They consist of landlords, agriculturists, traders, pensioners, rich vendors, etc. They have no license to carry this business.

The money lenders can be classified into two kinds, rural money lenders and urban money lenders. The money lenders, those who operate in villages are called rural money lenders. The lenders who operate in urban areas are called urban money lenders. They provide loans to poor labourers, factory workers, low paid employees, etc.

iii. Chit Fund: A Chit fund is one of the elements of the unorganised sector of the money market. Chit funds are recognized by law they are required to be registered under the Companies Act. The central government has purposed to introduce a special legislation called the chit fund Act.

II. Capital Market

Capital market refers to the organisation and the mechanism through which the companies, other institutions and the government raise long-term funds. So it constitutes all long-term borrowings from banks and financial institutions, borrowings from foreign markets and raising of capital by issuing various securities such as shares debentures, bonds, etc. For trading of securities there are two different segments in capital market. One is primary market and the other is, secondary market. The primary market deals with new/fresh issue of securities and is, therefore, known as new issue market. The secondary market on the other hand, provides a place for purchase and sale of existing securities and is known as stock market or stock exchange.

The new issue market primarily consists of the arrangements, which facilitates the procurement of long-term finance by the companies in the form of shares, debentures and bonds. The companies usually issue those securities at the initial stages of their formation and so also later on or expansion and/or modernization of their activities. However, the selling of securities is not an easy task, as the companies have to fulfil various legal requirements and decide upon the appropriate timing and the method of issue. Hence, they seek assistance of various intermediaries such as merchant bankers, underwriters, stock brokers etc. to look after all these aspects. All these intermediaries form an integral part of the primary market.

The secondary market (stock exchange) is an association or organisation or a body of individuals established for the purpose of assisting, regulating and controlling the business of buying, selling and dealing in securities. It may noted that it is called a secondary market because only the securities already issued can be traded on the floor of the stock exchange. This market is open only to its members, most of whom are brokers acting as agents of the buyers and sellers of securities. The main functions of this market lie in providing liquidity (ready encashment) to securities and safety in dealings. It is because of the availability of such facilities that people are ready to invest in various securities. Some of the securities are shares, debentures, special financial institutions, banks, non banking financial companies, mutual funds, leasing companies, foreign sources, retained earnings and public deposits. These are explained below in detail:

A. SHARES

Issue of shares is the main source of long term finance. Shares are issued by joint stock companies to the public. A company divides its capital into units of a definite face value, say of Rs. 10 each or Rs. 100 each. Each unit is called a share. A person holding shares is called a shareholder.
Characteristics of shares

The main characteristics of shares are following:

- a. It is a unit of capital of the company.
- b. Each share is of a definite face value.
- c. A share certificate is issued to a shareholder indicating the number of shares and the amount.
- d. Each share has a distinct number.
- e. The face value of a share indicates the interest of a person in the company and the extent of his liability.
- f. Shares are transferable units.

Investors are of different habits and temperaments. Some want to take lesser risk and are interested in a regular income. There are others who may take greater risk in anticipation of huge profits in future. In order to tap the savings of different types of people, a company may issue different types of shares. These are:

i. Preference Shares

Preference Shares are the shares which carry preferential rights over the equity shares. These rights are (a) receiving dividends at a fixed rate, (b) getting back the capital in case the company is wound-up. Investments in these shares are safe, and a preference shareholder also gets dividend regularly.

ii. Equity Shares

Equity shares are shares which do not enjoy any preferential right in the matter of payment of dividend or repayment of capital. The equity shareholder gets dividend only after the payment of dividends to the preference shares. There is no fixed rate of dividend for equity shareholders. The rate of dividend depends upon the surplus profits. In case of winding up of a company, the equity share capital is refunded only after refunding the preference share capital. Equity shareholders have the right to take part in the management of the company. However, equity shares also carry more risk. Following are the merits and demerits of equity shares:

(a) Merits of equity shares

(A) To the shareholders:

- 1. In case there are good profits, the company pays dividend to the equity shareholders at a higher rate.
- 2. The value of equity shares goes up in the stock market with the increase in profits of the concern.
- 3. Equity shares can be easily sold in the stock market.
- 4. Equity shareholders have greater say in the management of a company as they are conferred voting rights by the Articles of Association.

(B) To the Management:

- 1. A company can raise fixed capital by issuing equity shareswithout creating any charge on its fixed assets.
- 2. The capital raised by issuing equity shares is not required to be paid back during the life time of the company. It will be paid back only if the company is wound up.
- 3. There is no liability on the company regarding payment of dividend on equity shares. The company may declare dividend only if there is enough profits.
- 4. If a company raises more capital by issuing equity shares,
- 5. It leads to greater confidence among the investors and creditors.

(b) Demerits of equity shares

(A) To the shareholders

1. Uncertainly about payment of dividend:

Equity share-holders get dividend only when the company is earning sufficient profits and the Board of Directors declare dividend. If there are preference shareholders, equity shareholders get dividend only after payment of dividend to the preference shareholders.

2. Speculative:

Often there is speculation on the prices of equity shares. This is particularly so in times of boom when dividend paid by the companies is high.

3. Danger of over-capitalisation:

In case the management miscalculates the long term financial requirements, it may raise more funds than required by issuing shares. This may amount to over-capitalization which in turn leads to low value of shares in the stock market.

4. Ownership in name only:

Holding of equity shares in a company makes the holder one of the owners of the company. Such shareholders enjoy voting rights. They manage and control the company. But then it is all in theory. In practice, a handful of persons control the votes and manage the company. Moreover, the decision to declare dividend rests with the Board of Directors.

5. Higher Risk :

Equity shareholders bear a very high degree of risk. In case of losses they do not get dividend. In case of winding up of a company, they are the very last to get refund of the money invested. Equity shares actually swim and sink with the company.

B) To the Management

1. No trading on equity:

Trading on equity means ability of a company to raise funds through preference shares, debentures and bank loans etc. On such funds the company has to pay at a fixed rate. This enables equity shareholders to enjoy a higher rate of return when profits are large. The major part of the profit earned is paid to the equity shareholders because borrowed funds carry only a fixed rate of interest. But if a company has only equity shares and does not have either preference shares, debentures or loans, it cannot have the advantage of trading on equity.

2. Conflict of interests :

As the equity shareholders carry voting rights, groups are formed to corner the votes and grab the control of the company. There develops conflict of interests which is harmful for the smooth functioning of a company.

Basis of Difference	Equity Shares	Preference Shares		
1. Payment of dividend	Equity dividend is paid after paying the preference shares dividend.	Preference dividend are paid prior to equity shares dividend.		
2. Refund of capital	Equity share is refunded only after refund of preference share capital.	Preference shareholder has prior right to refund the capital over equity capital.		
3. Rate of dividend	Rate of dividend may over the year in equity shares.	Rate of dividend is fixed in preference shares.		

Difference between preference shares and equity shares

b. DEBENTURES

Whenever a company wants to borrow a large amount of fund for a

long but fixed period, it can borrow from the general public by issuing loan certificates called Debentures. The total amount to be borrowed is divided into units of fixed amount say of Rs.100 each. These units are called Debentures. These are offered to the public to subscribe in the same manner as is done in the case of shares. A debenture is issued under the common seal of the company. It is a written acknowledgement of money borrowed. It specifies the terms and conditions, such as rate of interest, time repayment, security offered, etc.

Characteristics of Debenture

Following are the characteristics of Debentures:

- i) Debentureholders are the creditors of the company. They are entitled to periodic payment of interest at a fixed rate.
- ii) Debentures are repayable after a fixed period of time, say five years or seven years as per agreed terms.
- iii) Debentureholders do not carry voting rights.
- Ordinarily, debentures are secured. In case the company fails to pay interest on debentures or repay the principal amount, the debentureholders can recover it from the sale of the assets of the company.

Types of Debentures :

Debentures may be classified as:

a. Redeemable Debentures:

These are debentures repayable on a pre-determined date or at any time prior to their maturity, provided the company so desires and gives a notice to that effect.

b. Irredeemable Debentures:

These are also called perpetual debentures. A company is not bound to repay the amount during its life time. If the issuing company fails to pay the interest, it has to redeem such debentures.

c. Convertible Debentures :

The holders of these debentures are given the option to convert their debentures into equity shares at a time and in a ratio as decided by the company.

d. Non-convertible Debentures:

These debentures cannot be converted into shares.

Merits of Debentures :

Following are some of the advantages of debentures:

1) Raising funds without allowing control over the company:

Debenture holders have no right either to vote or take part in the man agement of the company.

2) Reliable source of long term finance :

Since debentures are ordinarily issued for a fixed period, the company can make the best use of the money. It helps long term planning.

3) Tax Benefits :

Interest paid on debentures is treated as an expense and is charged to the profits of the company. The company thus saves income tax.

4) Investors' Safety :

Debentures are mostly secured. On winding up of the company, they are repayable before any payment is made to the shareholders. Interest on debentures is payable irrespective of profit or loss.

Demerits :

Following are the demerits of debentures:

- 1. As the interest on debentures have to be paid every year whether there are profits or not, it becomes burdensome in case the company incurs losses.
- 2. Usually the debentures are secured. The company creates a charge on its assets in favour of debentureholders. So a company which does not own enough fixed assets cannot borrow money by issuing debentures.

Moreover, the assets of the company once mortgaged cannot be used for further borrowing.

- 3. Debenture-finance enables a company to trade on equity. But too much of such finance leaves little for shareholders, as most of the profits may be required to pay interest on debentures. This brings frustration in the minds of shareholders and the value of shares may fall in the securities markets.
- 4. During depression the profits of the company decline. It may be difficult to pay interest on debentures. As interest goes on accumulating, it may lead to the closure of the company.

The following are the main points of difference between shares and debentures for raising long term capital.

Bases of differences	shares	Debentures		
ownership	The share of a company provides ownership to the shareholders.	The debenture holders provide loan, thus, debenture holders are creditors of a company.		
Form of return	The shareholder gets the return in form of dividend.	The debenture holders get the return in form of interest.		
identify	Person holding shares is known as shareholder.	Person holding a debenture is knows as debentures holders.		
Certainty of return	No certainty of returns in case of loss.	The rate of interest is fixed and is to be paid even if there is no profit.		
repayment	Repayment if the company liquidates and fund are available.	Repayment during its lifetime or at the specified period.		
convertibility	Shares can't be converted into debentures	Debentures can be converted into shares.		
control	Shareholders have the right to participate and vote in company's meeting.	Debenture holders do not possess any voting rights and can's participate in meetings.		
Priority of repayment	The shareholders get the payments after the debenture holders get.	The debenture holders get the first priority on payment.		
charge	The dividend is not deducted from taxable income.	The interest is deducted from taxable income.		

c. Special Financial Institute (SFI)

A number of special financial institutions have been set up by the central and state governments to provide long-term finance to the business organisations. They also offer support services in launching of the new enterprises and so also for expansion and modernisation of existing enterprises. Some of the important ones are Industrial Finance Corporation of India (IFCI), Industrial Investment Bank of India (IIBI), Industrial Credit and Investment Corporation of India (ICICI), Industrial Development Bank of India (IDBI), Infrastructure Development Finance Company Ltd. (IDFC), Small Industries Development Bank of India (SIDBI), State Industrial Development Corporations (SIDCs), and State Financial Corporations (SFCs), etc. Since these institutions provide development Finance, they are also known as Development Banks or Development Financial Institutions (DFI). Besides these development banks there are a few other financial institutions such as life Insurance Corporation of India (LIC), General Insurance Corporation of India (GIC) and Unit Trust of India (UTI) which provide long-term finance to companies and subscribe to their share and debentures. The main functions of these institutions are:

- (i) to grant loans for a longer period to industrial establishment;
- (ii) to help the establishment of business units that require large amount of funds and have long gestation period;
- (iii) to provide support for the speedy development of the economy in general and backward regions in particular;
- (iv) to offer specialized services operating in the areas of promotion, project assistance, technical assistance services and training and development of entrepreneurs;
- (v) to provide technical and professional management services and help in identification, evaluation and execution of new projects.

Let us have a brief idea about some of the Special Financial Institutions:

1. Industrial Finance Corporation of India (IFCI): It is the oldest SFI set up in 1948 with the primary objective of providing long-term and medium-term finance to large industrial enterprises. It provides financial assistance for setting up of new industrial

enterprises and for expansion or diversification of activities. It also provides support to modernisation and renovation of plant and equipment in existing industrial units. It can grant loan or subscribe to debentures issued by companies repayable in not more than 25 years. It can also guarantee loans raised from other sources or debentures issued to the public, and take up underwriting of the public issue of shares and debentures by companies. For ensuring greater flexibility to meet the needs of the changing financial system IFCI now stands transformed to IFCI Ltd. with effect from 1 June 1993.

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

It was set up in 1955 for providing long-term loans to companies for a period upto 15 years and subscribe to their shares and debentures. However, the proprietary and partnership firms were also entitled to secure loans from ICICI. Like IFCI, the ICICI also guarantees loans raised by companies from other sources besides underwriting their issue of shares and debentures. Foreign currency loans can also be secured by companies from ICICI. In the context of the emerging competitive scenario in the finance sector, ICICI has merged with ICICI Bank Ltd., with effect from 3 May 2002. Consequent upon the merger, the ICICI group's financing and banking operations have been integrated into a single full service banking company.

3. Industrial Development Bank of India (IDBI): It was set up in 1964 as a subsidiary of Reserve Bank of India for providing financial assistance to all types of industrial enterprises without any restriction on the type of finance and the amount of funds. It could also refinance loans granted by other financial institutions and offer guarantees for the loans raised from the capital market or scheduled banks. It also discounts and rediscounts the commercial bills of exchange and undertakes underwriting of the public issues. IDBI, like ICICI, has also transformed into a commercial bank and has been retitled as IDBI Ltd. with effect from 1 October 2004 with IDBI Bank merged into it.

4. Industrial Investment Bank of India (IIBI): The erstwhile Industrial Reconstruction Bank of India (IRBI), an institution which was set up for rehabilitation of small units has been reconstituted in 1997 as Industrial

Investment Bank of India. It is a full fledged all purpose development bank with adequate operational flexibility and autonomy. After the reconstruction its focus has changed from rehabilitation finance to development banking.

5. Small Industries Development Bank of India (SIDBI): It was set up in 1990 as a principal financial institution for the promotion, financing and development of small-scale industrial enterprises. It is an apex institution of all the banks providing credit facility to small-scale industries in our country. It offers refinancing of bills, rediscounting of bills, and several other support services to Small Scale Industries (SSI). It undertakes a wide range of promotional and development activities for improving the inherent strength of SSI units and creating avenues for the economic development of the rural poor.

6. State Financial Corporations (SFCs): In order to provide financial assistance to all types of industrial enterprises (proprietary and partnership firms as well as companies) most of the states of our country have set up SFCs. The primary objective of these corporations is to accelerate the pace of Industrial development in their respective states. SFCs provide finance in the form of long-term loans or through subscription of debentures, offer guarantee to loans raised from other sources and take up underwriting of public issues of shares and debentures made by companies. However, they cannot directly subscribe to the shares issued by the companies. The SFC (Amendment) Act, 2000 has provided greater flexibility to SFCs to cope with the changing economic and financial environment of the country.

7. State Industrial Development Corporations (SIDCs): These corporations were set up in 1960s and early 1970s by most state governments for promotions and development of medium and large-scale industries in their respective states. In addition to providing financial assistance to industrial units, they also undertake a variety of promotional activities. They also implement the various incentive schemes of the central and state governments.

8. Other Financial Institutions: Apart from the above special financial institutions, there are a few other organizations, which act as important source of long-term finance. These are:

- (a) Life Insurance Corporation of India (LIC): It was set up in 1956 on nationalisation of life insurance business in India. Primarily it carries on the business of life insurance and deploys the funds in accordance with national priorities and objectives. It invests mainly in government securities and shares, debentures and bonds of companies. It also extends financial assistance to banks and other institutions for social development and infrastructure facilities. It also underwrites new issues of shares and grant loans to the corporate sectors. Its performance with regard to assistance to corporate sector has been significant both in terms of sanctions and disbursements.
- (b) General Insurance Corporation of India (GIC): It was established in 1973 on nationalization of general insurance business in India. Like LIC, its investment priority is socially oriented sectors of the economy, and invests its funds in government securities and share and debentures of companies. It also provides term loans and underwriting facility to new and existing industrial undertakings.
- (c) Unit Trust of India (UTI): It was set up in 1964 as an investment trust with capital of Rs. 5 crore subscribed by Reserve Bank of India, LIC, State Bank of India and other financial institutions. It has been playing an important role in mobilizing the savings of the community through sale of units under various schemes (most well known being US-64 and master shares) and chanelising them into corporate investments. It has also been extending financial assistance to the companies by way of term loans, bills rediscounting, equipment leasing and hire purchase financing.
- (d) Export and Import Bank of India (EXIM Bank): The Export and Import Bank of India was set up on January, 1982 to take over the

operations of international finance wing of the IDBI and act as an apex institutions in the field of financing foreign trade. The main functions of the Bank are: (i) financing of export and import of goods and services; (ii) granting deferred payment credit for medium and long term duration; (iii) providing loans to Indian parties to enable them to contribute to share capital of joint ventures in foreign countries and; (iv) extending refinance facilities to commercial banks in respect of export credit. Recently it has introduced production equipment finance programme under which it provides rupee term finance to export oriented units for acquisition of equipment. Apart from these, the Exim Bank also undertakes merchant banking and development banking functions as considered necessary to finance promotional activities and providing counseling services to persons engaged in export-import business.

Venture Capital Institutions: Venture Capital is a form of equity **(e)** finance designed specially for funding high risk and high reward projects of young entrepreneurs. It helps them to turn their research and development projects into commercial ventures by providing them the initial capital and managerial assistance. The initial capital is provided in the form of equity participation through direct purchase of the share and debentures of the enterprise set up for the purpose. The institutions providing venture capital also actively participate in the management of the entrepreneurs' business. By actively involving and supporting the enterprises, they able to protect and enhance the value of their investment. The development of venture capital institutions is of recent origin in India. The concept was formally introduced in 1986-87 when the Government announced the creation of a venture fund to be operated by IDBI. It was followed by ICICI, IFCI and two public sector banks (State Bank of India and Canara Bank) who set up separate companies for the purpose. Some state government controlled development financial institutions viz., Gujarat Industrial Investment Corporation and Andhra Pradesh State Corporation also promoted their venture capital companies. In 1992- 93, SIDBI also set up a venture $\frac{84}{84}$

capital fund for providing financial assistance for innovative ventures in small-scale sector.

d. Banks

Besides providing short-term finance to business firms in the form of loans and advances, cash credit, overdraft etc. Most of the commercial banks, now-a-days have also started term lending (long and medium term) and providing need based finance of different time periods to firms of all sizes. Consistent with the policy of liberalization, the banks have been allowed to evolve their own methods of assessing financial needs of the borrowers and extend them the term loans for larger size and longer periods. Some of the banks have also started their industrial branches to finance exclusively to industrial enterprises. Thus, the commercial banks also now act as an important source of medium term and long term finance for the business. As a large number of cooperative banks are now being operating in our country, these banks have the license from the RBI to operate like commercial banks. They also some times provide long-term finances to small and medium scale cooperative industrial units like Sugar factories, food-processing units etc..

The merits of long-term borrowing from banks are as follows:

- 1. It is a flexible source of finance as loans can be repaid when the need is met.
- 2. Finance is available for a definite period, hence it is not a permanent burden.
- 3. Banks keep the financial operations of their clients secret.
- 4. Less time and cost is involved as compared to issue of shares, debentures etc.
- 5. Banks do not interfere in the internal affairs of the borrowing concern, hence the management retains the control of the company.
- 6. Loans can be paid-back in easy instalments.

7. In case of small-scale industries and industries in villages and backward areas, the interest charged is low.

Demerits:

Following are the demerits of borrowing from banks:

- 1. Banks require personal guarantee or pledge of assets and business cannot raise further loans on these assets.
- 2. In case the short term loans are extended again and again, there is always uncertainty about this continuity.
- 3. Too many formalities are to be fulfilled for getting term loans from banks. These formalities make the borrowings from banks time consuming and inconvenient.

e. Non-Banking Financial Companies (NBFCS)

You must have heard about various housing finance companies, investment companies, vehicle finance companies etc. operating in private sectors different parts of our country. These companies are categories under Non-Banking Financial Companies, because they perform the twin functions of accepting deposits from the public and providing loans. However they are not regarded as banking companies as they do not carry on the normal banking activities. They raise funds from the public by offering attractive rate of interest and give loans mainly to the wholesale and retail traders, small-scale industries and self-employed persons. The loans granted by these finance companies are generally unsecured and the interest charged by them ranges between 24 to 36 percent per annum. Besides giving loans and advances, the NBFCs also have purchase and discount hundis, undertaken merchant banking, housing finance, lease financing, hire purchase business etc. In our country, NBFCs have emerged as an important financial intermediary due to simplified loan sanction procedure, attractive rate of return on deposits, flexibility and timeliness in meeting the credit needs of the customers.

f. Mutual Funds

Mutual fund refers to a fund established in the form of a trust by a sponsor to raise money through one or more schemes for investing in securities. It is a special type of investment institution, which acts as an investment intermediary that collects or pools the savings of a large number of investors and invests them in a fairly large and well diversified portfolio of sound investments. This minimizes their risk and ensures good returns to the investors. Thus, they act as an investment agency for small investors and a good source for long-term finance for the business.

Features of mutual funds

The essential features of mutual funds are as follows:

- 1. It is a trust into which a number of investors invest their money in the form of units to form a large pool of funds.
- 2. The amount is invested in securities by the managers of the fund.
- 3. The amount is invested in different securities of reputed companies to ensure definite and regular income. Thus, it helps in minimizing the risk.
- 4. The mutual fund schemes often have the advantages of high return, easy liquidity, safety and tax benefits to the investors.
- 5. The net income received on the investments of the fund is distributed over the units held.
- 6. The managers of the fund are obliged to redeem the units on demand or on the expiry of a specified period.

Types of mutual funds

Wide variety of Mutual Fund Schemes exists to cater to the needs such as financial position, risk tolerance and return expectations etc. An overview regarding the various types of schemes in the Industry is given below:

Classification of mutual funds



A. By Structure:

- 1. **Open-Ended** This scheme allows investors to buy or sell units at any point in time. This does not have a fixed maturity date.
- 2. Closed-Ended In India, this type of scheme has a stipulated maturity period and investors can invest only during the initial launch period known as the NFO (New Fund Offer) period.
- **3.** Interval Funds Operating as a combination of open and closed ended schemes, it allows investors to trade units at pre-defined intervals

B. By Investment Objective

- 1. Equity/ Growth Equities are a popular mutual fund category amongst retail investors. Although it could be a high-risk investment in the short term, investors can expect capital appreciation in the long run. If you are at your prime earning stage and looking for long-term benefits, growth schemes could be an ideal investment.
- 2. Debt/Income In a debt/income scheme, a major part of the investable fund are channelized towards debentures, government securities, and other debt instruments. Although capital appreciation is low (compared to the equity mutual funds), this is a relatively low risk-low return investment avenue which is ideal for investors seeing a steady income.

- 3. Balanced This scheme allows investors to enjoy growth and income at regular intervals. Funds are invested in both equities and fixed income securities; the proportion is pre-determined and disclosed in the scheme related offer document. These are ideal for the cautiously aggressive investors.
- 4. Money Market/ Liquid This is ideal for investors looking to utilize their surplus funds in short term instruments while awaiting better options. These schemes invest in short-term debt instruments and seek to provide reasonable returns for the investors.
- C. Other Schemes
- 1. Tax Saving As the name suggests, this scheme offers tax benefits to its investors. The funds are invested in equities thereby offering long-term growth opportunities. Tax saving mutual funds (called Equity Linked Savings Schemes) has a 3-year lock-in period.
- 2. Special funds:
 - **a. Capital Protection** The primary objective of this scheme is to safeguard the principal amount while trying to deliver reasonable returns. These invest in high-quality fixed income securities with marginal exposure to equities and mature along with the maturity period of the scheme.
 - b. Fixed Maturity Plans (FMPs) FMPs, as the name suggests, are mutual fund schemes with a defined maturity period. These schemes normally comprise of debt instruments which mature in line with the maturity of the scheme, thereby earning through the interest component (also called coupons) of the securities in the portfolio. FMPs are normally passively managed, i.e. there is no active trading of debt instruments in the portfolio. The expenses which are charged to the scheme, are hence, generally lower than actively managed schemes.
- 3. Index Scheme Index schemes is a widely popular concept in the west. These follow a passive investment strategy where your investments replicate the movements of benchmark indices like Nifty, Sensex, etc.

4. Sector Specific Scheme - Sector Specific funds are invested in a specific sector like infrastructure, IT, pharmaceuticals, etc. or segments of the capital market like large caps, mid caps, etc. This scheme provides a relatively high risk-high return opportunity within the equity space.

Advantages of mutual funds

Mutual funds have designed to provide maximum benefits to investors, and fund manager have research team to achieve schemes objective. Assets Management Company has different type of sector funds, which need to proper planning for strategic investment and to achieve the market return.

5. Professional Management

When we invest in a mutual fund, our money is supervised by finance professionals. Investors who do not have the time or skill to supervise their own portfolio can invest in mutual funds.

6. Diversification

Mutual funds provide the advantage of diversification across different sectors and companies. Mutual funds diversify investments across various industries and asset classes. Thus, by investing in a mutual fund, we can make profits from the benefits of diversification and asset allocation, without investing a large amount of funds that would be required to build an individual portfolio.

7. Liquidity

The investment in mutual funds is liquefied in nature. Normally funds take a couple of time for returning your money to you. Since they are well incorporated with the banking system, most funds can transmit the money directly to your bank account.

8. Flexibility

Investors can benefit from the convenience and flexibility given by mutual funds to invest in a wide range of schemes. The option of systematic (at regular intervals) investment and withdrawal is also offered to investors in most open-ended schemes. Depending on one's inclinations and convenience one can invest or withdraw funds.

9. Low Transaction Costs

Due to the economies of scale (benefits of larger volumes), mutual funds pay lesser transaction costs. These benefits are passed on to the investors.

10. Transparency

Funds provide investors with updated information pertaining to the markets and the schemes. All material facts are disclosed to investors as required by the regulator.

11. Safety

Mutual Fund industry is part of a well-regulated investment environment where the interests of the investors are protected by the regulator. All funds are registered with SEBI and complete transparency is forced.

Disadvantages of mutual funds

The mutual fund not just advantage of investor but also has disadvantages for the funds. The fund manager not always made profits but might creates loss for not properly managed. The fund have own strategy for investment to hold, to sell, to purchase unit at particular time period.

12. Costs Control Not in the Hands of an Investor

Investor has to pay investment management fees and fund distribution costs as a percentage of the value of his investments (as long as he holds the units), irrespective of the performance of the fund.

13. No Customized Portfolio

The portfolio of securities in which a fund invests is a decision taken by the fund manager. Investors have no right to interfere in the decision making process of a fund manager, which some investors find as a constraint in achieving their financial objectives.

14. Difficulty in Selecting a Suitable Fund Scheme

Many investors find it difficult to select one option from the plethora of funds/schemes/plans available. For this, they may have to take advice from financial planners in order to invest in the right fund to achieve their objectives.

15. Other disadvantages:

- 16. Mutual Funds Lack Liquidity
- 17. No guarantee of returns
- 18. Diversification of portfolio doesn't maximize returns
- 19. Selecting right financial securities is not easy
- 20. Cost management not proportional to performance

g. Leasing Companies

This method has become quite common among the manufacturing companies. Leasing facility is usually provided through the mediation of leasing companies who buy the required plant and machinery from its manufacturer and lease it to the company that needs it for a specified period on payment of an annual rent. For this purpose a proper lease agreement is made between the lessor (leasing company) and lessee (the company hiring the asset). Such agreement usually provides for the purchase of the machinery by the lessee at the end of the lease period at a mutually agreed and specified price. It may be noted that the ownership remains with the leasing company during the lease period. Sometimes, a company, to meet its financial requirements, may sell its own existing fixed asset (machinery or building) to a leasing company at the current market price on the condition that the leasing company shall lease the asset back to selling company for a specified period. Such an arrangement is known as 'Sell and Lease Back'. The company in such arrangement gets the funds without having to part with the possession of the asset involved which it continues to use on payment of annual rent for the lease.

It may be noted that in any type of leasing agreement, the lease rent includes an element of interest besides the expenses and profits of the leasing company. In fact, the leasing company must earn a reasonable return on its investment in lease asset. The leasing business in India started, in seventies when the first leasing company of India was promoted by Chitambaram Group in 1973 in Chennai. The Twentieth Century Finance Company and four other finance companies joined the fray during eighties. Now their number is very large and leasing has emerged as an important source. It is very helpful for the small and medium sized undertakings, which have limited financial resources.

h. Forign Sources

Foreign Sources also play an important part in meeting the long-term financial needs of the business in India. These usually take the form of (1) external borrowings; (2) foreign investments and; (3) deposits from NRIs. Let us have a brief idea about these sources:

1. External Borrowings: These include loans obtained at concessional rates of interest with long maturity period and commercial borrowings. The major sources of concessional loans have been the International Monetary Fund (IMF), Aid India Consortium (AIC), Asian Development Bank (ADB), World Bank (International Bank for Reconstruction and Development) and International Financial Corporation. The World Bank grants loans for specific industrial projects of high priority and given either directly to an industrial concern or through a government agency. The International Finance Corporation, an affiliate of the World Bank, grants loans to industrial units for a period of 8 to 10 years. Such loans do not require government guarantee. As for the external commercial borrowings, their major sources has been the export credit agencies like US Exim Bank, the Japanese Exim Bank, Export Credit and Guarantee Corporation of U.K. and other government and multilateral agencies. The external commercial borrowings are permitted by the government as an important source of finance for Indian firms for the expansion investments.

2. Foreign Investments: The foreign investments in our country are generally done in the form of foreign direct investment (FDI) or through foreign collaborations. The foreign direct investment usually refers to the subscription by the foreigners to shares and debentures of the Indian Companies. This is also known as portfolio investment and covers their subscription to ADRs, GDRs and FCCBs (Foreign Currency Convertible Bonds). Alternatively, some companies are formed with the specified purpose of operating in India or the multinationals can set up their subsidiary or branch in India. As for the foreign collaborations, these can be of financial collaborations involving foreign companies participation in equity capital of an existing or new undertaking. The technical collaborations are by way of supply of technical knowledge, patents and machineries. To start with, the technical collaborations had been the more popular form in the past. But during the post liberalisation phase, shift from technical collaborations to financial collaborations is noticed in our country. It may be noted that the government has been very successful in attracting more foreign investment in the post liberalisation era. It is because the Government of India now permits automatic approval of foreign investment upto 51% equity in 34 industries and a special board (Foreign Investment Promotion Board) has been set up to process cases not covered by automatic approvals. The main advantage of foreign investment is that generally the foreign investor also brings with him the technical expertise and the modern machinery. The disadvantage, however, is that a large part of profits are transferred to the foreign investors.

3. Non-resident Indians (NRIs): You are aware that the persons of Indian origin (PIO) living abroad commonly known as Non-Resident Indians (NRIs) constitute an important source of long-term finance for industries in India. The most common form of their contribution is in the form of deposits under Foreign Currency Non-Resident Account (FCNRA) and Non-Resident (External) Rupee Account (NRERA). It is worth noting that the share of NRI deposits in the total foreign capital flows (net) was 26.7%

during the year 2001-02. However, like external borrowing, NRI deposits are high cost source of external finance and are fair weather friends. Hence, too much dependence on NRI deposits is not a right policy. It may be noted that they are also permitted to subscribe to the shares and debentures of the companies in India, and have the option of selling them and take back the amount. This constitutes an integral part of foreign direct investment.

i. Retained Earnings

The company may not distribute the whole of its profits among its shareholders. It may retain a part of the profits and utilize it as capital. Companies keep these savings in various accounts such as General Reserve, Debenture Redemption Reserve and Dividend Equalisation Reserve etc. These reserves can be used to meet long term financial requirements. The portion of the profits which is not distributed among the shareholders but is retained and is used in business is called retained earnings or ploughing back of profits. As per Indian Companies Act., companies are required to transfer a part of their profits in reserves. The amount so kept in reserve may be used to buy fixed assets. This is called internal financing.Retained earnings refer to the undistributed profits of companies which is usually kept in the form of general reserve. Primarily, it is a hedge against low profits in future and is used for the issue of bonus shares by the company. But, in effect, it acts as an import source of long-term finance for the companies with Zero cost of capital. The retained profits can be used for expansion and modernization programmes by the companies. The amount of retained earnings is determined by the quantum of profits, the dividend payout policy followed by the management, the legal provisions for dividend payment, and the rate of corporate taxes etc. It is an internal source, which does not involve any cost of floatation and the uncertainties of external financing. In fact, it is regarded as the most dependable source of long-term finance. It also strengthens the firm's equity base, which enables to borrow at better terms and conditions.

Merits :

Following are the benefits of retained earnings:

1. Cheap Source of Capital :

No expenses are incurred when capital is available from this source. There is no obligation on the part of the company either to pay interest or pay back the money. It can safely be used for expansion and modernization of business.

2. Financial stability :

A company which has enough reserves can face ups and downs in business. Such companies can continue with their business even in depression, thus building up its goodwill.

3. Benefits to the shareholders:

Shareholders may get dividend out of reserves even if the company does not earn enough profit. Due to reserves, there is capital appreciation, i.e. the value of shares go up in the share market.

Limitation :

Following are the limitations of Retained Earnings:

1. Huge Profit :

This method of financing is possible only when there are huge profits and that too for many years.

2. Dissatisfaction among shareholders :

When funds accumulate in reserves, bonus shares are issued to the shareholders to capitalise such funds. Hence the company has to pay more dividends. By retained earnings the real capital does not increase while the liability increases. In case bonus shares are not issued, it may create a situation of under-capitalisation because the rate of dividend will be much higher as compared to other companies.

3. Fear of monopoly :

Through ploughing back of profits, companies increase their financial strength. Companies may throw out their competitors from the market and monopolize their position.

4. Mis-management of funds :

Capital accumulated through retained earnings encourages management to spend carelessly.

j. Public Deposits

It is a very old source of finance in India. When modern banks were not there, people used to deposit their savings with business concerns of good repute. Even today it is a very popular and convenient method of raising medium term finance. The period for which business undertakings accept public deposits ranges between six months to three years.

Procedure to raise funds through public deposits:

An undertaking which wants to raise funds through public deposits advertises in the newspapers. The advertisement highlights the achievements and future prospects of the undertaking and invites the investors to deposit their savings with it. It declares the rate of interest which may vary depending upon the period for which money is deposited. It also declares the time and mode of payment of interest and the repayment of deposits. A depositor may get his money back before the date of repayment of deposits for which he will have to give notice in advance.

Features :

- 1. These deposits are not secured.
- 2. They are available for a period ranging between 6 months and 3 years.
- 3. They carry fixed rate of interest.
- 4. They do not require complicated legal formalities as are required in the case of shares or debentures.

Keeping in view the malpractices of certain companies, such as not paying interest for years together and not refunding the money, the Government has framed certain rules and regulations regarding inviting public to deposit their savings and accepting them.

Rules governing Public Deposits

Following are the main rules governing public deposits:

- 1. Deposits should not be made for less than six months or more than three years.
- 2. Public is invited to deposit their savings through an advertisement in the press. This advertisement should contain all relevant information about the company.
- 3. Maximum rate of interest is fixed by the Reserve Bank of India.
- 4. Maximum rate of brokerage is also fixed by the Reserve Bank of India.
- 5. The amount of deposit should not exceed 25% of the paid up capital and general reserves.
- 6. The company is required to maintain Register of Depositors containing all particulars as to public deposits.
- 7. In case the interest payable to any depositor exceeds Rs. 10,000 p.a., the company is required to deduct income-tax at source.

Advantages :

Following are the advantages of public deposits:

1. Simple and easy:

The method of borrowing money through public deposit is very simple. It does not require many legal formalities. It has to be advertised in the newspapers and a receipt is to be issued.

2. No charge on assets :

Public deposits are not secured. They do not have any charge on the fixed assets of the company.

3. Economical:

Expenses incurred on borrowing through public deposits is much less than expenses of other sources like shares and debentures.

4. Flexibility:

Public deposits bring flexibility in the structure of the capital of the company. These can be raised when needed and refunded when not required.

Disadvantages:

Following are the disadvantages of public deposits:

1. Uncertainty:

A concern should be of high repute and have a high credit rating to attract public to deposit their savings. There may be sudden withdrawals of deposits which may create financial problems.

2. Insecurity:

Public deposits do not have any charge on the assets of the concern. It may not always be safe to deposit savings with companies particularly those which are not very sound.

3. Lack of attraction for professional investors:

As the rate of return is low and there is no capital appreciation, the professional investors do not appreciate this mode of investment.

4. Uneconomical :

The rate of interest paid on public deposits may be low but then there are other expenses like commission and brokerage which make it uneconomical.

5. Hindrance to growth of capital-market :

If more and more money is deposited with the companies in this form there will be less investment in securities. Hence the capital market will not grow. This will deprive both the companies and the investors of the benefits of good securities.

6. Over-capitalisation :

As it is an easy, convenient and cheaper source of raising money, companies may raise more money than is required. In that case it may not be able to make the best use of the funds or may indulge in speculative activities.

4.5 FINANCIAL PLANNING AND FORECASTING

A long-term financial plan represents a blueprint of what a firm proposes to do in the future.

Typically it covers a period of three to ten years - most commonly it spans a period of five years. Naturally, planning over such an extended time horizon tends to be in fairly aggregative terms. While there is considerable variation in the scope, degree of formality, and level of sophistication in financial planning across firms, most corporate financial plans have certain common elements. These are shown in exhibit 4.1.



Exhibit 4.1

- **1.** Economic assumptions : The financial plan is based on certain assumptions about the economic environment (interest rate, tax rate, inflation rate, growth rate, exchange rate, and so on).
- 2. Sales forecast : The sales forecast is typically the starting point of the financial forecasting exercise. Most financial variables are related to the sales figure.
- **3. Pro forma statements :** The heart of a financial plan are the pro forma (forecast) profit and loss account and balance sheet.
- 4. Asset requirements : Firms need to invest in plant and equipment and working capital. The financial plan spells out the projected capital investments and working capital requirements over time.
- **5. Financing plan :** Suitable sources of financing have to be thought of for supporting the investment in capital expenditure and working capital. The financing plan delineates the proposed means of financing.

Thus, the capital budgeting decision, working capital decision, capital structure decision, and dividend decision have to be established for developing an explicit financial plan.

Companies spend considerable time and resources in financial planning. Hence, it is reasonable to ask: What are the benefits of financial planning? Inter alia, financial planning:

- Identifies advance actions to be taken in various areas.
- Seeks to develop a number of options in various areas that can be exercised under different conditions.
- Facilitates a systematic exploration of interaction between investment and financing decisions.
- Clarifies the links between present and future decisions.
- Forecasts what is likely to happen in future and hence helps in avoiding surprises.

- Ensures that the strategic plan of the firm is financially viable.
- Provides benchmarks against which future performance may be measured.

In defence of planning, Eisenhower, former U.S. President remarked: " In preparing for battle, I always found that plans are useless but planning is indispensable...Planning forces you to think deeply and futuristically in a more systematic manner."

4.5.1 SALES FORECAST

The sales forecast is typically the starting point of the financial forecasting exercise. Most of the financial variables are projected in relation to the estimated level of sales. Hence, the accuracy of the financial forecast depends critically on the accuracy of the sales forecast. Although the financial manager may participate in the process of developing the sales forecast, the primary responsibility for it typically vests with the marketing department or the planning group.

Sales forecasts may be prepared for varying planning horizons to serve different purposes. A sales forecast for a period of 3-5 years, or for even longer durations, may be developed mainly to aid investment planning. A sales forecast for a period of one year (and in some cases two years) is the primary basis for the financial forecasting.

Sales forecasts for shorter durations (six months, three months, one month) may be prepared for facilitating working capital planning and cash budgeting.

A wide range of sales forecasting techniques and methods are available. They may be divided into three broad categories:

• Qualitative Techniques These techniques rely essentially on the judgement of experts to translate qualitative information into quantitative estimates.

- Time Series Projection Methods These methods generate forecasts on the basis of an analysis of the past behaviour of time series.
- Casual Models These techniques seek to develop forecasts based on cause-effect relationships expressed in explicit, quantitative manner.

Each technique has its own advantages and limitations. Often, exclusive reliance on a single technique is somewhat dangerous. Practical wisdom suggests that at least two techniques, which seem to make sense in the specific circumstances of the firm, may be employed to hammer out the sales forecast.

4.6 PRO FORMA PROFIT AND LOSS ACCOUNT

There are two commonly used methods for preparing the pro forma profit and loss account - the percent of sales method and the budgeted expense method.

Percent of Sales Method The percent of sales method for preparing the pro forma profit and loss account is fairly simple. Basically, this method assumes that the future relationship between various elements of costs to sales will be similar to their historical relationship. When using this method, a decision has to be taken about which historical cost ratios to be used: Should these ratios pertain to the previous year, or the average of two or more previous years?

Exhibit 4.1 illustrates the application of the percent of sales method of preparing the pro forma profit and loss account of Spaceage Electronics for the year 20X3. In this table, historical data are given for two previous years, 20X1 and 20X2. For projection purposes, a ratio based on the average of two previous years has been used. The forecast value of each item is obtained as the product of the estimated sales and the average percent of sales ratio applicable to that item. For example, the average percent of sales ratio for cost of goods sold is 65.0 percent. This is calculated as (775 + 837)/(1200 + 1280). Multiplying the estimated sales of 1400 by 65.0 percent, the projected value of cost of goods sold has been calculated. Likewise, the projected

values of other items in the income statement have been calculated. Although, in practice, some deviation from a mechanical application of this method is unavoidable, for the sake of illustration, the projections shown in Exhibit 4.2 are based on a strict application of this method, except for dividends and retained earnings. Remember that the distribution of earnings between dividends and retained earnings reflects a managerial policy which is not easily expressible in mechanistic terms.

Budgeted Expense Method The percent of sales method, though simple, is too rigid and mechanistic. For deriving the pro forma profit and loss account shown in Exhibit 4.2, we assumed that all elements of costs and expenses bore a strictly proportional relationship to sales. The budgeted expense method, on the other hand, calls for estimating the value of each

item on the basis of expected developments in the future period for which the pro forma profit and loss account is being prepared. Obviously, this method requires greater effort on the part of management because it calls for defining likely developments.

A Combination Method It appears that a combination of the two methods described above often works best. For certain items, which have a fairly stable relationship with sales, the percent of sales method is quite adequate. For other items, where future is likely to be very different from the past, the budgeted expense method, which calls for managerial assessment

of expected future developments, is eminently suitable. A combination method of this kind is

neither overly simplistic as the percent of sales method nor unduly onerous as the budgeted expense method.

Exhibit 4.2 Pro Forma Profit and Loss Account for Spaceage Electronics for 20X3 Based on Percent of Sales Method.

	Historical data			Pro forma profit
	20X1	20X2	Average percent of sales	and account of 20X3 assuming sales of 1400
Net sales	1200	1280	100.0	1400.0
Cost of goods sold	775	837	65.0	910.0
Gross profit	425	443	35.0	490.0
Selling expenses	25	27	2.1	29.4
General and administration				
expenses	53	54	4.3	60.2
Depreciation	75	80	6.3	88.2
Operating profit	272	282	22.3	312.2
Non-operating surplus/ deficit	30	32	2.5	35.0
Profit before interest and tax	302	314	24.8	347.2
Interest on bank borrowings	60	65	5.0	70.0
Interest on debentures	58	60	4.8	67.2
Profit before tax	184	189	15.0	210.0
Тах	82	90	6.9	96.6
Profit after tax	102	99	8.1	113.4
Dividends	60	63		
Retained earnings	42	36		

Exhibit 4.3 presents the 20X3 pro forma profit and loss account for Spaceage Electronics, constructed by using a combination of the percent of sales and the budgeted expense methods.

Cost of goods sold, selling expenses, non-operating surplus/deficit, and interest on bank borrowings are assumed to change proportionally with sales, the proportions being the average of the two preceding years. All the remaining items have been budgeted on some specific basis.

4.7 PRO FORMA BALANCE SHEET

The projections of various items on the assets side and liabilities side of the balance sheet may be derived as follows:

- 1. Employ the percent of sales method to project the items on the assets side, except 'investments' and 'miscellaneous expenditures and losses'.
- 2. Estimate the expected values for 'investments' and 'miscellaneous expenditures and losses', using specific information applicable to them.
- 3. Use the percent of sales method to derive the projected values of current liabilities and provisions (referred to as spontaneous liabilities).
- 4. Obtain the projected value of reserves and surplus by adding the projected retained earnings (from the pro forma profit and loss statement) to the reserves and surplus figure of the previous period.

Exhibit 4.3 Pro Forma Profit and Loss Account for Spaceage Electronics for 20X3 Using the Combination Method

		Historical data	а	Pro forma profit and loss account of 20X3
	20 X 1	20 X 2	Average percent of sales	
Net sales	1200	1280	100.0	1400.0
Cost of goods sold	775	837	65.0	910.0
Gross profit	425	443	@	490.0
Selling expenses	25	27	2.1	29.4
General and administration	53	54	Budgeted	56.0
Depreciation	75	80	Budgeted	85.0
Operating profit	272	282	@	319.6
Non-operating surplus/ deficit	30	32	2.5	35.0
Profit before interest and tax	302	314	@	354.6
Interest on bank borrowings	60	65	5.0	70.0
Interest on debentures	58	60	Budgeted	65.0
Profit before tax	184	189	@	219.6
Тах	82	90	Budgeted	90.0
Profit after tax	102	99	@	129.6
Dividends	60	63	Budgeted	70.0
Retained earnings	42	36	@	59.6

@ These items are obtained using accounting identities.

- 5. Set the projected values for equity and preference capital to be tentatively equal to their previous values.
- Assume that the projected values for loan funds will be tentatively equal to their previous levels less repayments or retirements as per terms and conditions applicable to them.

Exhibit 4.4 Pro Forma Balance Sheet of Spaceage Electronics for December 31, 20X3

	Historical data			Projection for
	December 31, 20X1	December 31, 20X2	Average of per cent of sales or forecast sales some other basis	Dec. 31, 20X3 based on a forecast sales of 1400
Net sales	1200	1280	100.0	1400.0
Assets				
Fixed assets (net)	800	850	66.5	931.0
Investments	30	30	No change	30
Current assets, loans and a	dvances			
Cash and bank	25	28	2.1	29.4
Receivables	200	212	16.6	232.4
Inventories	375	380	30.4	425.6
Pre-paid expenses	50	55	4.2	58.8
Miscellaneous expenditures				
and losses	20	20	No change	20
Total	1500	1575		1727.2
Liabilities				
Share capital				
Equity	250	250	No change	250.0
Preference	50	50	No change	50.0
Reserves and surplus	250	286	Proforma income statement	345.6
Secured loans				
Debentures	400	400	No change	400
Bank borrowings	300	305	24.4	341.6
Unsecured loans				
 Bank borrowings Current liabilities and 	100	125	9.1	127.4
	100	440	0.5	110.0
 rade creditors 	100	112	8.5	119.0
Provisions External funds	50	47	3.9 Beleneizz forma	54.6
External tunds requirement			Balancing figure	39.0
Total	1500	1575		1727.2
7. Compare the total of the assets side with that of the liabilities side and determine the balancing item (If assets exceed liabilities, the balancing item represents the 'external funds required'. If the liabilities exceed assets, the balancing item represents the 'surplus available funds').

Illustration To illustrate the preparation of the *pro forma* balance sheet, let us continue the example of Spaceage Electronics. Exhibit 5.4 shows the balance sheets of Spaceage for 20X1 and 20X2.

The pro forma balance sheet for 20X3 is derived as follows:

Item	Basis of Projection
Current assets	Percent of sales method wherein the propor- tions are based on the average for the previ- ous two years.
Fixed assets	🖩 - do -
Investments	Assumption of no change
Miscellaneous expenditures and losses	🖩 - do -
Current liabilities and provisions	Percent of sales method wherein the propor- tions are based on the average for the previ- ous two years.
Equity and preference capital	Previous values
Reserves and surplus	Proforma and loss account
Secured loans : Debentures	Previous values
Secured loans: Bank borrowings	Percent of sales method wherein the propor- tions are based on the average for the previ- ous two years.
Unsecured loans	🖩 - do -
External funds required	Balancing item

Circularity Problem A circularity problem arises when the pro forma financial statements are prepared because the profit and loss account and the balance sheet are interrelated. The pro forma balance sheet cannot be prepared unless the pro forma profit and loss account, showing the amount of retained earnings to be carried to the balance sheet, is ready. At the same time, without the proforma balance sheet, we cannot figure out the interest expense associated with the amount of external financing, an item required to prepare the pro forma profit and loss account.

4.8 KEY GROWTH RATES

Growth is often the central theme of corporate planning. Firms generally state corporate goals in terms of growth rates. Given our emphasis on maximising shareholder value as the principal goal of the firm, the preoccupation of planners with growth seems puzzling. One way to explain this is to assume that growth is an intermediate goal which, in turn, contributes to value creation.

While firms are interested in growth, they may be reluctant to raise external equity. Given this reluctance, it is useful to calculate two growth rates in the context of long-term financial planning: the internal growth rate and the sustainable growth rate.

The Internal Growth Rate

The internal growth rate is the maximum growth rate that can be achieved with no external financing whatsoever. Put differently, this is the growth rate that can be sustained with retained earnings, which represent internal financing

- To determine the internal growth rate, we will make the following assumptions:
- The assets of the firm will increase proportionally to sales.
- The net profit margin (net profit to sales) is constant.
- The dividend payout ratio (and the ploughback ratio) is given.
- The firm will not raise external finance.



Exhibit 4.5 Various Possible Ratio Relationships (Rs. in million)

Given these assumptions, the internal growth rate is a plug variable. To derive the plug variable, remember that the change in assets must be equal to the retained earnings:

Addition to assets = Addition to retained earnings

We can now write the conditions that satisfy this equality and solve for the growth rate.

To do this, we will employ the following variables.

- m = net profit margin on sales
- b = ploughback ratio
- A0 = current total assets of the firm

S0 = sales for the current year

S1 = sales for the next year

g = growth rate in sales as well as assets

Given the above assumptions and symbols, we get the following.

Net profit for the next period : $mS_1 = mS_0 (1+g)$

Addition to retained earnings : $mS_0(1+g)b$ Addition to assets : A_0g

Since the addition to assets equals the addition to retained earnings we have:

$$A_0g = mS_0\left(1+g\right)b$$

Juggling this a bit, we get:

$$g = \frac{mS_0 b}{A_0 - mS_0 b}$$

Dividing both the numerator and the denominator of the right hand side of above Eq. by A0, we get:

$$g = \frac{m(S_0 / A_0)b}{A_0 / A_0 - m(S_0 / A_0)b}$$

In words,

Internal growth rate = $\frac{\text{Net profit margin} \times \text{Asset turnover} \times \text{Ploughback ratio}}{1 - \text{Net profit margin} \times \text{Asset turnover} \times \text{Ploughback ratio}}$

Recall from the previous chapter that:

Return on assets = Net profit margin × Asset turnover

Thus,

Internal growth rate = $\frac{\text{Return on assets} \times \text{Ploughback ratio}}{1 - \text{Return on assets} \times \text{Ploughback ratio}}$

To illustrate, suppose the return on assets and ploughback ratio for Acme Chemicals are 12 percent and 60 percent respectively. What is the internal growth rate? The internal growth rate is:

 $\frac{0.12 \times 0.6}{1 - 0.12 \times 0.6} = 0.78 \text{ or } 7.8 \text{ percent}$

The Sustainable Growth Rate

The sustainable growth rate is the maximum growth rate that a firm can achieve without resorting to external equity finance. This is the growth rate that can be sustained with the help of retained earnings matched with debt financing, in line with the debt-equity policy of the firm.

This is an important growth rate because firms are reluctant to raise external equity finance (even though they may not mind raising debt finance, in line with their debt - equity policy) for the following reasons: (i) The dilution of control, consequent to the external equity issue, may not be acceptable to the existing controlling interest, (ii) There may be a significant degree of underpricing when external equity is raised, (iii) The cost of issue tends to be high. The sustainable growth rate is calculated the way in which the internal growth rate is calculated, except for one difference: To calculate the sustainable growth rate we have to consider retained earnings plus matching debt, in line with the firm's debt equity (D/E) ratio. Thus:

Addition to assets = Additional retained earnings + Additional debt $A_0g = mS_0(1+g)b + mS_0(1+g)b(D/E)$

Juggling this equation a bit, we get

$$g = \frac{m(S_0 / A_0) (1 + D / E)b}{1 - m(S_0 / A_0) (1 + D / E)b}$$

In words,

Sustainable growth rate = $\frac{\text{Net profit margin } \times \text{Asset turnover}}{1 - \text{Net profit margin } \times \text{Asset turnover}}$ $\frac{\times (1 + \text{Debt} - \text{equity ratio}) \times \text{Ploughback ratio}}{\times (1 + \text{Debt} - \text{equity ratio}) \times \text{Ploughback ratio}}$

Recall from the previous chapter that:

Return on equity = Net profit margin × Asset turnover × (1 + Debt–equity ratio) Thus,

Sustainable growth rate = $\frac{\text{Return on equity } \times \text{Ploughback ratio}}{1 - \text{Return on equity } \times \text{Ploughback ratio}}$

To illustrate, suppose the return on equity and ploughback ratio for Zenith Electronics are 15 percent and 70 percent. What is the sustainable growth rate? The sustainable growth rate is:

 $\frac{0.15 \times 0.7}{1 - 0.15 \times 0.7} = 0.117 \text{ or } 11.7 \text{ percent}$

Examining Eq. we find that other things being equal.

- The higher the net profit margin, the higher the sustainable growth rate.
- The higher the asset turnover, the higher the sustainable growth rate.
- The higher the debt-equity ratio, the higher the sustainable growth rate.
- The higher the ploughback ratio, the higher the sustainable growth rate.

Thus, the sustainable growth rate can be increased, by effecting one or more of the following changes:

- Increase in the net profit margin
- Increase in the asset turnover ratio
- Increase in the debt-equity ratio
- Increase in the ploughback ratio

Though the above-mentioned changes enhance the sustainable growth rate, management may not have equal influence over them. Further, these changes do not always have a favourable overall impact on the firm. For example, it may be possible for the management to change the payout ratio and the financial leverage ratio more easily than to change the net profit margin or the asset turnover ratio. In effecting these changes their other implications have to be taken into account. For example, a decrease in the dividend payout ratio may have an unfavourable effect on the stock price and an increase in financial leverage may raise the total risk of the firm beyond acceptable limits. ² The steps involved here are as follows:

$A_0g = m S_0 (1+g) b + m S_0 (1+g) b (D / E)$	(1)
$g = m \left(S_0 / A_0 \right) \left(1 + g \right) b + m \left(S_0 / A_0 \right) \left(1 + g \right) b \left(D / E \right)$	(2)
$g = m (S_0 / A_0) b + m(S_0 / A_0)gb + m (S_0 / A_0) b (D / E) + m (S_0 / A_0) g b (D / E)$	(3)
$g = m (S_0 / A_0) b (1 + D / E) + m (S_0 / A_0) g b (1 + D / E)$	(4)
$g - m (S_0 / A_0) gb (1 + D / E) = m (S_0 / A_0) b (1 + D / E)$	(5)
$g \left[1 - m \left(S_0 / A_0 \right) b \left(1 + D / E \right) \right] = m \left(S_0 / A_0 \right) b \left(1 + D / E \right)$	(6)
$g = \frac{m(S_0 / A_0) b(1 + D / E)}{1 - m(S_0 / A_0) b(1 + D / E)}$	(7)
$a = 1 - m(S_0 / A_0) b (1 + D/L)$	

4.9 CONCEPT OF FINANCIAL ANALYSIS

Financial statements (Income Statement and Balance Sheet) of companies are summarised financial reports which provide the operating results and financial position of companies, and the detailed information contained therein is useful for assessing the operational efficiency and financial soundness of a company. This requires proper analysis and interpretation of such information for which a number of techniques (tools) have been developed by financial experts. In this chapter we will have an overview of these techniques.

The process of critical evaluation of the financial information contained in the financial statements in order to understand and make decisions regarding the operations of the firm is called 'Financial Statement Analysis'. It is basically a study of relationship among various financial facts and figures as given in a set of financial statements, and the interpretation thereof to gain an insight into the profitability and operational efficiency of the firm to assess its financial health and future prospects.

The term 'financial analysis' includes both 'analysis and interpretation'. The term analysis means simplification of financial data by methodical classification given in the financial statements. Interpretation means explaining the meaning and significance of the data. These two are complimentary to each other. Analysis is useless without interpretation, and interpretation without analysis is difficult or even impossible.

According to John N. Myer, 'Financial Statement Analysis is largely a study of relationships among the various financial factors in a business, as disclosed by a single set of statements, and study of these factors as shown in a series of statements.'

According to Alan S. Donnahoe - "The inability to understand and deal with financial data is a severe handicap in the corporate world"

Thus, Financial statement analysis is a judgemental process which aims to estimate current and past financial positions and the results of the operation of an enterprise, with primary objective of determining the best possible estimates and predictions about the future conditions. It essentially involves regrouping and analysis of information provided by financial statements to establish relationships and throw light on the points of strengths and weaknesses of a business enterprise, which can be useful in decision-making involving comparison with other firms (cross sectional analysis) and with firms' own performance, over a time period (time series analysis).

4.10 SIGNIFICANCE OF FINANCIAL ANALYSIS

Financial analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the various items of the balance sheet and the statement of profit and loss. Financial analysis can be undertaken by management of the firm, or by parties outside the firm, viz., owners, trade creditors, lenders, investors, labour unions, analysts and others. The nature of analysis will differ depending on the purpose of the analyst. A technique frequently used by an analyst need not necessarily serve the purpose of other analysts because of the difference in the interests of the analysts. Financial analysis is useful and significant to different users in the following ways: (a) Finance manager: Financial analysis focuses on the facts and relationships related to managerial performance, corporate efficiency, financial strengths and weaknesses and creditworthiness of the company. A finance manager must be well-equipped with the different tools of analysis to make rational decisions for the firm. The tools for analysis help in studying accounting data so as to determine the continuity of the operating policies, investment value of the business, credit ratings and testing the efficiency of operations. The techniques are equally important in the area of financial control, enabling the finance manager to make constant reviews of the actual financial operations of the firm to analyse the causes of major deviations, which may help in corrective action wherever indicated.

(b) **Top management:** The importance of financial analysis is not limited to the finance manager alone. It has a broad scope which includes top management in general and other functional managers. Management of the firm would be interested in every aspect of the financial analysis. It is their overall responsibility to see that the resources of the firm are used most efficiently and that the firm's financial condition is sound. Financial analysis helps the management in measuring the success of the company's operations, appraising the individual's performance and evaluating the system of internal control.

(c) **Trade payables:** Trade payables, through an analysis of financial statements, appraises not only the ability of the company to meet its short-term obligations, but also judges the probability of its continued ability to meet all its financial obligations in future. Trade payables are particularly interested in the firm's ability to meet their claims over a very short period of time. Their analysis will, therefore, evaluate the firm's liquidity position.

(d) Lenders: Suppliers of long-term debt are concerned with the firm's long term solvency and survival. They analyse the firm's profitability over a period of time, its ability to generate cash, to be able to pay interest and repay the principal and the relationship between various sources of funds (capital structure relationships). Long-term lenders analyse the historical financial statements to assess its future solvency and profitability.

(e) **Investors:** Investors, who have invested their money in the firm's shares, are interested about the firm's earnings. As such, they concentrate on the analysis of the firm's present and future profitability. They are also interested in the firm's capital structure to ascertain its influences on firm's earning and risk. They also evaluate the efficiency of the management and determine whether a change is needed or not. However, in some large companies, the shareholders' interest is limited to decide whether to buy, sell or hold the shares.

(f) Labour unions: Labour unions analyse the financial statements to assess whether it can presently afford a wage increase and whether it can absorb a wage increase through increased productivity or by raising the prices.

(g) Others: The economists, researchers, etc., analyse the financial statements to study the present business and economic conditions. The government agencies need it for price regulations, taxation and other similar purposes.

4.11 OBJECTIVES OF FINANCIAL ANALYSIS

Analysis of financial statements reveals important facts concerning managerial performance and the efficiency of the firm. Broadly speaking, the objectives of the analysis are to apprehend the information contained in financial statements with a view to know the weaknesses and strengths of the firm and to make a forecast about the future prospects of the firm thereby, enabling the analysts to take decisions regarding the operation of, and further investment in the firm. To be more specific, the analysis is undertaken to serve the following purposes (objectives):

- a. to assess the current profitability and operational efficiency of the firm as a whole as well as its different departments so as to judge the financial health of the firm.
- b. to ascertain the relative importance of different components of the financial position of the firm.

c. to identify the reasons for change in the profitability/financial position of the firm.

d. to judge the ability of the firm to repay its debt and assessing the short-term as well as the long-term liquidity position of the firm.

Through the analysis of financial statements of various firms, an economist can judge the extent of concentration of economic power and pitfalls in the financial policies pursued. The analysis also provides the basis for many governmental actions relating to licensing, controls, fixing of prices, ceiling on profits, dividend freeze, tax subsidy and other concessions to the corporate sector.

4.12 TYPES AND TECHNIQUES OF FINANCIAL ANALYSIS

The tools and techniques presented in this section facilitate evaluations of company data. Evaluations require comparisons. It is difficult to say that a company's financial performance was "good" without clarifying the basis for comparison. In assessing a company's ability to generate and grow earnings and cash flow, and the risks related to those earnings and cash flows, the analyst draws comparisons to other companies (cross-sectional analysis) and over time (trend or time-series analysis).

For example, an analyst may wish to compare the profitability of companies competing in a global industry. If the companies differ significantly in size and/or report their financial data in different currencies, comparing net income as reported is not useful. Ratios (which express one number in relation to another) and common-size financial statements can remove size as a factor and enable a more relevant comparison. To achieve comparability across companies reporting in different currencies, one approach is to translate all reported numbers into a common currency using exchange rates at the end of a period. Others may prefer to translate reported numbers using the average exchange rates during the period. Alternatively, if the focus is primarily on ratios, comparability can be achieved without translating the currencies. The analyst may also want to examine comparable performance over time. Again, the nominal currency amounts of sales or net income may not highlight significant changes. However, using ratios, horizontal financial statements where quantities are stated in terms of a selected base year value, and graphs can make such changes more apparent. Another obstacle to comparison is differences in fiscal year end. To achieve comparability, one approach is to develop trailing twelve months data, which will be described in a section below. Finally, it should be noted that differences in accounting standards can limit comparability.

1. Comparative Statements: These are the statements showing the profitability and financial position of a firm for different periods of time in a comparative form to give an idea about the position of two or more periods. It usually applies to the two important financial statements, namely, balance sheet and statement of profit and loss prepared in a comparative form. The financial data will be comparative only when same accounting principles are used in preparing these statements. If this is not the case, the deviation in the use of accounting principles should be mentioned as a footnote. Comparative figures indicate the trend and direction of financial position and operating results. This analysis is also known as 'horizontal analysis'.

2. Common Size Statements: These are the statements which indicate the relationship of different items of a financial statement with a common item by expressing each item as a percentage of that common item. The percentage thus calculated can be easily compared with the results of corresponding percentages of the previous year or of some other firms, as the numbers are brought to common base. Such statements also allow an analyst to compare the operating and financing characteristics of two companies of different sizes in the same industry. Thus, common size statements are useful, both, in intra-firm comparisons over different years and also in making inter-firm comparisons for the same year or for several years. This analysis is also known as 'Vertical analysis'.

3. Trend Analysis: It is a technique of studying the operational results and financial position over a series of years. Using the previous years' data

of a business enterprise, trend analysis can be done to observe the percentage changes over time in the selected data. The trend percentage is the percentage relationship, in which each item of different years bear to the same item in the base year. Trend analysis is important because, with its long run view, it may point to basic changes in the nature of the business. By looking at a trend in a particular ratio, one may find whether the ratio is falling, rising or remaining relatively constant. From this observation, a problem is detected or the sign of good or poor management is detected.

4. **Ratio Analysis:** It describes the significant relationship which exists between various items of a balance sheet and a statement of profit and loss of a firm. As a technique of financial analysis, accounting ratios measure the comparative significance of the individual items of the income and position statements. It is possible to assess the profitability, solvency and efficiency of an enterprise through the technique of ratio analysis.

5. Cash Flow Analysis: It refers to the analysis of actual movement of cash into and out of an organisation. The flow of cash into the business is called as cash inflow or positive cash flow and the flow of cash out of the firm is called as cash outflow or a negative cash flow. The difference between the inflow and outflow of cash is the net cash flow. Cash flow statement is prepared to project the manner in which the cash has been received and has been utilised during an accounting year as it shows the sources of cash receipts and also the purposes for which payments are made. Thus, it summarises the causes for the changes in cash position of a business enterprise between dates of two balance sheets.

4.13 PROBLEMS IN FINANCIAL ANALYSIS

Financial statement analysis can be a very useful tool for understanding a firm's performance and condition. However, there are certain problems and issues encountered in such analysis which call for care, circumspection, and judgement.

a) Lack of an Underlying Theory : The basic problem in financial statement analysis is that there is no theory that tells us which numbers

to look at and how to interpret them. In the absence of an underlying theory financial statement analysis appears to be ad hoc, informal, and subjective. As Horrigan put it: "From a negative viewpoint, the most striking aspect of ratio analysis is the absence of an explicit theoretical structure As a result, the subject of ratio analysis is replete with untested assertions about which ratios should be used and what their proper levels should be."

- **b) Conglomerate Firms :** Many firms, particularly the large ones, have operations spanning a wide range of industries. Given the diversity of their product lines, it is difficult to find suitable benchmarks for evaluating their financial performance and condition. Hence, it appears that meaningful benchmarks may be available only for firms which have a well defined industry classification.
- c) Window Dressing : Firms may resort to window dressing to project a favourable financial picture. For example, a firm may prepare its balance sheet at a point when its inventory level is very low. As a result, it may appear that the firm has a very comfortable liquidity position and a high turnover of inventories. When window dressing of this kind is suspected, the financial analyst should look at the average level of inventory over a period of time and the not the level of inventory at just one point of time.
- d) Price Level Changes : Financial accounting, as it is currently practiced in India and most other countries, does not take into account price level changes. As a result, balance sheet figures are distorted and profits misreported. Flence, financial statement analysis can be vitiated. The movement toward "fair value accounting" may mitigate this problem.
- e) Variations in Accounting : Policies Business firms have some latitude in the accounting treatment of items like depreciation, valuation of stocks, research and development expenses, foreign exchange transactions, installment sales, preliminary and pre-operative expenses,

provision of reserves, and revaluation of assets. Due to diversity of accounting policies found in practice, comparative financial statement analysis may be vitiated. This problem has become more acute in the wake of globalisation as major competitors may be found overseas. Due to differences in accounting standards, it is difficult to compare financial statements across countries. Hopefully, as accounting standards converge globally, this problem will be mitigated.

- f) Interpretation of Results : Though industry averages and other yardsticks are commonly used in financial ratios, it is somewhat difficult to judge whether a certain ratio is 'good' or 'bad'. A high current ratio, for example, may indicate a strong liquidity position (something good) or excessive inventories (something bad). Likewise, a high turnover of fixed assets may mean efficient utilisation of plant and machinery or continued flogging of more or less fully depreciated, worn out, and inefficient plant and machinery. Another problem in interpretation arises when a firm has some favourable ratios and some unfavourable ratios and this is rather common. In such a situation, it may be somewhat difficult to form an overall judgment about its financial strength or weakness. Multiple discriminant analysis, a statistical tool, may be employed to sort out the net effect of several ratios pointing in different directions.
- g) Correlation among Ratios: Notwithstanding the previous observation, financial ratios of a firm often show a high degree of correlation. Why? This is because several ratios have some common element (sales, for example, is used in various turnover ratios) and several items tend to move in harmony because of some common underlying factor. In view of ratio correlations, it is redundant and often confusing to employ a large number of ratios in financial statement analysis. Hence it is necessary to choose a small group of ratios from a large set of ratios. Such a selection requires a good understanding of the meaning and limitations of various ratios and an insight into the economics of the business.

4.14 GUIDELINES FOR FINANCIAL ANALYSIS

From the foregoing discussion, it is clear that financial statement analysis cannot be treated as a simple, structured exercise. When you analyse financial statements bear in mind the following guidelines.

1. Use ratios to get clues to ask the right questions: By themselves ratios rarely provide answers, but they definitely help you to raise the right questions.

2. Be selective in the choice of ratios: You can compute scores of different ratios and easily drown yourself into confusion. For most purposes a small set of ratios - three to seven - would suffice. A few ratios, aptly chosen, would capture most of the information that you can derive from financial statements.

3. Employ proper benchmarks: It is a common practice to compare the ratios (calculated from a set of financial statements) against some benchmarks. These benchmarks may be the average ratios of the industry or the ratios of the industry leaders or the historical ratios of the firm itself.

4. Know the tricks used by accountants: Since firms tend to manipulate the reported income, you should learn about the devices employed by them.

5. Read the notes to account: Footnotes sometimes contain valuable information. They may reveal things that management may try to hide. The more difficult it is to read a footnote, the more information-laden it may be.

6. Remember that financial statement analysis is an odd mixture of art and science: Financial statement analysis cannot be regarded as a simple, structured exercise. It is a process requiring care, thought, common sense, and business judgement - a process for which there are no mechanical substitutes.

4.15 QUALITATIVE FACTORS RELEVANT FOR EVALUATING THE PERFORMANCE AND PROSPECTS OF A COMPANY

The tools of analysis discussed in this chapter are helpful in making business decisions, evaluating performance, and forecasting future developments. Comprehensive business analysis, however, calls for going beyond the conventional financial measures to consider qualitative factors relevant for evaluating the performance and prospects of a company. The American Association of Individual Investors (AAII) has summarised these factors as follows:

1. Are the company's revenues tied to one key customer? If so, the company's performance may decline dramatically if the customer goes elsewhere. On the other hand, if the relationship is firmly entrenched, this might actually stabilise sales.

2. To what extent are the company's revenues tied to one key product? Companies that rely on a single product may be more efficient and focused, but a lack of diversification increases risk. If revenues come from several different products, the overall bottom line will be less affected by a drop in the demand for any one product.

3. To what extent does the company rely on a single supplier? Depending on a single supplier may lead to unanticipated shortages, which investors and potential creditors should consider.

4. What percentage of the company's business is generated overseas? Companies with a large percentage of overseas business are often able to realise higher growth and larger profit margins. However, firms with large overseas operations find that the value of their operations depends in large part on the value of the local currency. Thus, fluctuations in currency markets create additional risks for firms with large overseas operations. Also, the potential stability of the region is important.

5. Competition. Generally, increased competition lowers prices and profit margins. In forecasting future performance, it is important to assess both the likely actions of the current competition and the likelihood of new competitors in the future.

6. Future prospects. Does the company invest heavily in research and development? If so, its future prospects may depend critically on the success of new products in the pipeline. For example, the market's assessment of a computer company depends on how next year's products are shaping up. Likewise, investors in pharmaceutical companies are interested in knowing whether the company has developed any potential blockbuster drugs that are doing well in the required tests.

7. Legal and regulatory environment. Changes in laws and regulations have important implications for many industries. For example, when forecasting the future of tobacco companies, it is crucial to factor in the effects of proposed regulations and pending or likely lawsuits. Likewise, when assessing banks, telecommunications firms, and electric utilities, analysts need to forecast both the extent to which these industries will be regulated in the years ahead, and the ability of individual firms to respond to changes in regulation.

4.16 SUMMARY

Securities which are traded in financial markets are money market securities, capital market securities and derivatives securities. Derivative securities enable investors to engage in speculation and risk management. . In India, the financial markets are the combination of money market and capital market. The money market is composed of two categories of financial agencies, organised sector and unorganised sector.

Financial ratio analysis, the principal tool of financial statement analysis, is a study of ratios between items or groups of items in financial statements. Financial ratios may be divided into five broad types: liquidity ratios, leverage ratios, turnover ratios, profitability ratios, and valuation ratios. Liquidity refers to the ability of the firm to meet its obligations in the short run, usually one year. Current ratio and acid-test ratio are the important liquidity ratios. Leverage refers to the use of debt finance. Debt-equity ratio, interest coverage ratio, and fixed charges coverage ratio are the important leverage ratios. Turnover refers to the efficiency of asset use. Inventory turnover ratio, receivables turnover ratio, fixed assets turnover ratio, and total assets turnover ratio are the important turnover ratios. Profitability reflects the final result of business operations. Gross profit margin ratio, net profit margin ratio, return on assets, earning power, return on capital employed, and return on equity are the most important profitability ratios. Valuation refers to the assessment of the firm by the capital market. Priceearnings ratio and market value - book value ratio are the most important valuation ratios. For judging whether the ratios are high or low, cross-section analysis and time-series analysis are used. Properly combined, financial ratios may be used to assess corporate excellence, judge creditworthiness, predict bankruptcy, value equity shares, predict bond ratings, and measure market risk. While financial statement analysis can be a very useful tool, there are certain problems and issues encountered in such analysis that call for care, circumspection, and judgment. Comprehensive business analysis calls for going beyond conventional financial measures to consider qualitative factors relevant for evaluating the performance and prospects of a company.

4.17 GLOSSARY

- Securities: A security or financial instrument is a tradable asset of any kind. Securities are broadly categorized into, debt securities (such as bank notes, bonds and debentures), equity securities, e.g., common stocks and derivative contracts, such as forwards, futures, options and swaps.
- **Money market securities:** Money market securities are debt securities that have a maturity of one year or less.
- **Capital market securities:** Securities with a maturity of more than one year are called capital market securities.
- **Bonds:** In finance, a bond is an instrument of indebtedness of the bond issuer to the holders. It is a debt security, under which the issuer owes the holders a debt and, depending on the terms of the bond, is obliged to pay them interest (the coupon) and/or to repay the principal at a later date, termed the maturity.
- **Mortgages:** Mortgages are long term debt obligations created to finance the purchase of real estate.

4.18 SELF ASSESSMENT QUESTIONS

1. Define the securities which are traded in financial market?

2. Outline the guidelines for analysing financial statements.

4.19 LESSON END EXERCISE

1. Discuss in detail Key growth rate.

2. Explain in detail financial planning and forecasting.

3. What are the benefits of financial planning?

4.	Describe briefly the types of sales forecasting techniques and
	methods.

4.20 SUGGESTED READINGS

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- Madura, Jeff (2009), "Financial Markets and Institution", 9th Edition, South-Western College Publication.
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BASICS OF FINANCIAL MANAGEMENT

UNIT-I

Lesson No. 5

FINANCIAL POLICY AND CORPORATE STRATEGY

STRUCTURE

- 5.1 Introduction
- 5.2 Objectives
- 5.3 Sources of positive NPV
- 5.4 Qualitative factors influencing financial planning and policies
- 5.5 Financial Policy and corporate strategy
- 5.6 Organisational considerations
- 5.7 Summary
- 5.8 Glossary
- 5.9 Self Assessment Questions
- 5.10 Lesson End Exercise
- 5.11 Suggested Readings

5.1 INTRODUCTION

Finance is regarded as the life blood of business. It is of vital significance for modern business which requires huge capital. financial manager prepares pro forma, or projected, financial statements to (a) assess whether the firm's forecasted performance squares with its own targets and with the expectation of investors, (b) examine the effect of proposed operating changes, (c) anticipate the financing needs of the firm, and (d) estimate the future free cash flows that determine the firm's value. The financial plan is part of a larger planning system in the firm. The planning process is guided by the firm's mission, which reflects what the firm stands for. For example, the mission statement of Ranbaxy Laboratories is: "To be a research - oriented international pharmaceutical company." While the mission statement reflects the raison detre of the firm, corporate objectives spell out the specific goals sought by the firm. For example, a firm may seek to achieve a market share of 30 percent, a growth rate of 18 percent, and a return on equity of 20 percent. Corporate strategies or policies are the instruments of achieving the corporate goals. For example, a firm may follow a simultaneously pursue expansion, diversification, and vertical integration. To support the chosen strategies, policies and budgets are developed in various areas such as research and development, production, marketing, HR, and finance.

5.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain the sources of positive NPV
- identify the various factors affecting financial planning
- define financial planning and corporate startegy

5.3 SOURCES OF POSITIVE NPV

It is often taken for granted that there is an abundance of positive NPV projects which can be identified rather easily. However, choosing positive NPV projects is akin to selecting undervalued securities using fundamental analysis. The latter is possible if there are imperfections in the financial market that cause a discrepancy between security prices and their equilibrium values (intrinsic values). Likewise, imperfections in real markets (product and factor markets) lead to entry barriers which cause positive NPVs. Hence, an understanding of entry barriers is helpful in identifying positive NPV projects. It appears that there are six main entry barriers that result in positive NPV projects which are as follows:

- a. Economies of scale
- b. Product differentiation
- c. Cost advantage
- d. Marketing reach

- e. Technological edge
- f. Government policy

a. Economies of Scale - Economies of scale means that an increase in the scale of production, marketing, or distribution results in a decline in the cost per unit. When substantial economies of scale are present, the existing firms are likely to be large in size. The more pronounced the economies of scale, the greater the cost advantage of the existing firms. In order to exploit the economies of scale, new entrants require substantial investments in plant and machinery, research and development, and market development. Such capital needs serve as an entry barrier. The greater the capital requirement, the higher the barrier to entry. This seems to be especially true in industries like petroleum refining, mineral extraction, iron and steel, and aluminum.

b. Product Differentiation - A firm can create an entry barrier by successfully differentiating its products from those of its rivals. The basis for differentiation may be one or more of the following:

- Effective advertising and superior marketing
- Exceptional service
- Innovative product features
- High quality and dependability

c. Cost Advantage- If a firm can enjoy cost advantage vis-a-vis its competitors, it can be reasonably assured of earning returns. Cost advantage may stem from one or more of the following:

- Accumulated experience and comparative edge on the learning curve
- Monopolistic access to low cost materials
- A favourable location
- More effective cost control and cost reduction

d. Marketing Reach- A penetrating marketing reach is an important source of competitive advantage. Two examples illustrate this:

Avon Products markets its products through a worldwide network of 1,200,000 independent sales representatives. Avon's competitors find it almost impossible to replicate this. Thanks to such a nonpareil marketing network, Avon has been able to earn superior returns in a highly competitive industry.

The breadth and depth of Hindustan Unilever's distribution network is miles ahead of its competitors.

e. Technological Edge- Technological superiority enables a firm to enjoy excellent returns. Firms like Intel and Apple have earned superior returns over extended periods of time due to, inter alia, the technological edge they had over their rivals.

f. Government Policy- A government policy that shelters a firm from the onslaught of competition enables it to earn superior returns. Government policies that create entry barriers, partial or absolute, include the following:

- Restrictive licensing
- Import restrictions
- High tariff walls
- Environmental controls

g. Special tax reliefs - A number of firms in India benefited substantially from government policies which offered considerable protection to them from potential competition, domestic as well as foreign, for many years. The liberalisation measures of recent years have, of course, dismantled, partly or substantially, entry barriers stemming from earlier government policies. Remember what the government can give, it can also take away.

5.4 QUALITATIVE FACTORS INFLUENCING FINANCIAL PLANNING AND POLICIES

A mosaic of influences that can best be described qualitatively have an important bearing on capital expenditure decisions. These are discussed below:

a. Intuition - The use of intuition in major business decisions, including capital expenditure decisions, is far more common than people think. Often the capital

expenditure decisions are influenced by the 'inspired whim' of a strong person. Many chief executives admit that ultimately their decisions are based on gut-feeling. Robert Docktor conducted an experiment in which he wired up a group of chief executive officers to an electroencephalograph. He found that the brains of chief executive officers were more active in right hemispheres, suggesting that they frequently relied on intuitive hunches to define complex problems in an open-ended state of ambiguity. Henry Mintzberg's study likewise showed that for making most of the strategic decisions managers depend on the factor of judgment rather than explicit analysis. They are often guided by their intuition and are not able to explain adequately—the how or why—of their strategic decisions. Bruce D. Henderson, a leading management expert, has expressed the importance of intuition as follows: "The final choice in all business decisions is, of course, intuitive. It must be. Otherwise, it is not a decision, just a conclusion - a printout".

"Intuition can be awesome in its value at times. It is known as good judgment in everyday affairs. Intuition is in fact the subconscious integration of all the experiences, conditioning, and knowledge of a lifetime, including the emotional and cultural biases of that life time". In a similar vein, Kenichi Ohmae, a Japanese authority on management, says:

"Successful business strategies result not from rigorous analysis (which is necessary) but from a particular state of mind. In the mind of the strategist, insight and a consequent drive for achievement fuel a thought process which is basically creative and intuitive rather than rational."

Nobody doubts the value of intuition as it reflects accumulated experience, conditioning, memory, and pattern recognition. However, since intuition also reflects personal biases and inappropriate analogies, it is useful when it works in tandem with rational analysis. Whoever thinks that intuition is a substitute for reason is indulging in a risky delusion. Detached from rigorous analysis, intuition is a fickle and undependable guide - it is as likely to lead to disaster as to success. So, the right side of the brain, the seat of intuition, must collaborate with the left side of the brain, the source of reason and logic. As Kim Wallace put it: "The key to making a decision is to delay the decision until it makes logical sense and it feels right.

The two sides of the brain must agree. If they don't, delay the decision. Get more input from more sources until it eventually relies upon both logical and intuitive perspectives. It sounds very simple, and it is. But I never made a bad decision using this process."

b. Vision Most successful business groups/companies all over the world are guided by a vision of its leaders, which serves as a superordinate goal and influences the investment decisions directly and indirectly. Here are some examples of business vision:

IBM	: Value-added leadership position
Honda	: No.1 producer of the best motorcycles in the world
Reliance Industries	: An integrated empire
Bajaj Auto	: Global player
Tata Motors	: Technological competence
ITC	: India International
Bell System	: Our business is service
Ranbaxy Laboratories	: A research-based international pharmaceutical company

c. Superstition Many businessmen consult astrologers or depend on some other superstitious counsel. With the following statements:

"What do businessmen have to lose if, plain business sense apart, they also want to know if the planets are favourably disposed toward them."

"The more money a businessman makes, the more insecure he feels. Consulting an astrologer is a therapeutic experience. If you are going through a bad phase and are told that it has been caused due to the adverse effects of planets in your horoscope, you do not completely blame yourself. Moreover, most Indian businessmen are by nature religious."

"There is hardly any businessman in India who doesn't consult an astrologer, although most of them lack the conviction and courage to admit it." The dependence on astrological advice or superstitious counsel is not confined to India. It is pervasive globally. In a profoundly insightful book, Kenneth Boulding writes: "The persistence of superstition even into a supposedly scientific age is testimony to the power of traditional images in ambiguous situations. It is a curious fact, for instance, that even in the most advanced societies the daily paper frequently carries a column of astrological advice!" Astrologers and psychologists have argued that magical rites and superstitious behaviour make the world look more deterministic and instil confidence in our ability to manage it. Superstitious beliefs seem to help in:

- Relieving anxiety
- Imparting a sense of control
- Encouraging necessary activity

Hence such beliefs persist. And the more unpredictable or uncertain the future appears to be, the greater may be the psychological urge to rely on superstitions.

- d. Politics Internal political elements often have an important bearing on capital budgeting decisions. Various levels of management tend to get divided into factions. Mutual loyalties among people belonging to the same faction may lead to acceptance of otherwise marginal or even sub-marginal projects. On the other hand, negative feelings among people belonging to different factions may lead to rejection of otherwise promising projects. Put differently, internal political games can mar the quality of decision making and investment proposals may not be viewed in an unbiased and objective manner.
- e. **Sponsorship** A project cannot be divorced from its sponsor. Research on decisionmaking processes of top management suggests that a decision at this level is likely to be a bet on the sponsor of the project. The facts, the projections, and even the project tend to be secondary in importance if the questions asked by the top management are: Who is the sponsor of the project? What is his commitment to the project? What is his track record? Will he be able to surmount obstacles on the way and deliver the goods?
- **f. Intangible Benefits** A capital project may generate some benefits that cannot be easily quantified. It may increase the flexibility available to the organisation; it may improve the attractiveness of the product; it may give the organisation a sense of pride; it may make the work environment more pleasing; it may strengthen the

technological capability of the firm; it may enhance the morale of the firm. Referred to generally as intangibles, these benefits cannot be translated into monetary terms. Yet, they are relevant and cannot be ignored in investment decision making.

g. Multiple Reviews Capital expenditure proposals are generally reviewed by two to three committees in most companies. Generally, these committees consist of independent, hard-headed individuals.

5.5 FINANCIAL POLICY AND CORPORATE STRATEGY

Financial planning and policy are the principal instruments for implementing corporate strategy. Yet the tie-in between corporate strategy and capital budgeting is often loose and tenuous with the following:

- Investment proposals are often considered as self-contained projects and viewed more or less in isolation. The rationale preferred for this approach is that if individual proposals are sound, a collection of such proposals should represent a meaningful commitment of funds.
- The sponsors of proposals, particularly operating personnel, tend to, quite understandably, view the proposals from their limited perspective. An operating person, for example, may justify an investment in terms of increase in output and decrease in unit cost. The effect of the investment on the break-even point or inventory level may be beyond his concern.
- Many investment proposals, suggested by people down the line and apparently fulfilling certain standards of profitability, may be rejected by the capital budgeting committee because they conflict with the rationale of corporate strategy. This may breed frustration and cynicism about the role of formal analysis.

Strengthening the Links Between Corporate Strategy and Capital Budgeting

In order to ensure that corporate strategy and firm's long-range plans firmly under gird the capital budgeting process, the following ought to be done:

- Long-range planning should precede capital budgeting.
- Long-range plans should be formalised and communicated to all persons involved in the process of capital budgeting.

• During the capital budgeting exercise, investment proposals should be viewed in the context of the critical premises of long-range plans.

A suggested time table linking business planning and capital budgeting is given in Exhibit 5.1.

	Business Planning		Capital Budgeting
April-August	Several scenarios are explored		
September	Initial premises are agreed to		Initial capital budgeting guidelines are formulated
October– December January	Work is continued toward develo- ping a final formal business plan. Final business plan is adopted.	October – January February	Capital budget selection is carried out in divisions and departments Capital budget is approved by the executive committee
		March	Capital budget is approved by the board

Exhibit 5.1 Linkages Between Business Planning and Capital Budgeting

Strategy and Capital Allocation - Two major issues addressed in the strategy formulation exercise are : What businesses should we be in ? What should be our relative commitment of resources to these businesses? These questions may be answered in various ways. A commonly adopted approach is to employ some portfolio planning model. A popular portfolio planning model is the General Electric's Stoplight Matrix developed by the General Electric Company of the U.S. for guiding its resources allocation. It calls for analysing various products of the firm in terms of two key issues:

Business strength - How strong is the firm vis-a-vis its competitors?

Industry attractiveness - What is the attractiveness or potential of the industry?

The commitment of funds to various products is guided by how they are rated in terms of the above two dimensions. As shown in Exhibit 15.4 products which are favourably placed justify substantial commitment of funds, products which are unfavourably placed call for divestment, and products which are placed in between qualify for modest investment.



Fig 5.2: An Approach to Decision Making

5.6 ORGANISATIONAL CONSIDERATIONS

In order to be meaningful and viable, the financial policy of a firm must satisfy some conditions:

- a. It must be compatible with the resources of the firm.
- b. It must be controllable
- c. It must be endorsed by executive management.

These are explained below in detail:

- **a. Compatibility with Resources** The capital budget of a firm must be compatible with its resources financial capacity and managerial capability.
- **b. Controllability** As the business environment is continually changing and evolving, even thebest conceived business plans may turn out to be ill-advised and poorly timed. Hence, sound controls should be instituted in the process of capital budgeting.

c. Executive Endorsement The capital budget of the firm must be backed by the executive management. Endorsement of executive management is required at all stages: long-range planning, funds planning, and development of budgetary controls.

5.7 SUMMARY

It is often taken for granted that there is an abundance of positive NPV projects which can be identified rather easily. However, choosing positive NPV projects is akin to selecting undervalued securities using fundamental analysis. The latter is possible if there are imperfections in the financial market that cause a discrepancy between security prices and their equilibrium values (intrinsic values). Likewise, imperfections in real markets (product and factor markets) lead to entry barriers which cause positive NPVs. Hence, an understanding of entry barriers is helpful in identifying positive NPV projects.

The use of intuition in major business decisions, including capital expenditure decisions, is far more common than people think. Often the capital expenditure decisions are influenced by the 'inspired whim' of a strong person. Many chief executives admit that ultimately their decisions are based on gut-feeling. Most successful business groups/companies all over the world are guided by a vision of its leaders, which serves as a superordinate goal and influences the investment decisions directly and indirectly. Many businessmen consult astrologers or depend on some other superstitious counsel. Financial planning and policy are the principal instruments for implementing corporate strategy.

5.8 GLOSSARY

- **Mutual Fund:** A mutual fund is a type of professionally managed collective investment vehicle that pools money from many investors to purchase securities
- **Leasing:** Leasing is a process by which a firm can obtain the use of a certain fixed assets for which it must pay a series of contractual, periodic, tax deductible payments
- **Hire Purchase:** Hire purchase is the legal term for a contract, in which persons usually agree to pay for goods in parts or a percentage at a time, a hire-purchase contract allows the buyer to hire the goods for a rent.
- **Venture capital:** Venture capital is financial capital provided to early-stage, high-potential, high risk, growth startup companies.

• Internal accruals: are nothing but the reserve of profits or retention of earnings that the firm has created over the years. They represent one of the most essential sources of long term finance since they are not injected into the business from external sources. Rather it is self-generated and highlights the sustainability and profitability of the entity Also internal accruals are owner's funds and therefore create no charge on the assets of the company

5.9 SELFASSESSMENT QUESTIONS

1. "Financial policy affects corporate policy." Comment.

2. How is our intuition affects our financial policy?

3. Discuss the relationship between business planning and capital budgeting.

5.10 LESSON END EXERCISE

1. Comment on the issues addressed in the strategy formulation exercise.

2.	Explain the intangible benefits generated by capital project.

5.11 SUGGESTED READINGS

- I.M.Pandey, Financial Management, Vikas Publisher.
- M.Y.Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

CAPITAL BUDGETING AND COST OF CAPITAL

UNIT-II

Lesson No. 6

CONCEPT, NATURE & PROCESS OF CAPITAL BUDGETING

STRUCTURE

- 6.1 Introduction
- 6.2 Objectives
- 6.3 Concept of Capital Budgeting
- 6.4 Nature of Capital Budgeting
- 6.5 Types of Investment Decision
- 6.6 Investment Evaluation Criteria
- 6.7 Process of Capital Budgeting
- 6.8 Summary
- 6.9 Glossary
- 6.10 Self Assessment Questions
- 6.11 Lesson End Exercise
- 6.12 Suggested Readings

6.1 INTRODUCTION

An efficient allocation of capital is the most important finance function in the modern times. It involves decisions to commit the firm's
funds to the long-term assets. Such decisions are of considerable importance to the firm since they tend to determine its value size by influencing its growth, profitability and risk.

6.2 OBJECTIVES

After studying this unit, you should be able to

- discuss the concept of capital budgeting.
- · understand nature of capital budgeting

6.3 CONCEPT OF CAPITAL BUDGETING

The investment decisions of a firm are generally known as the capital budgeting, or capital expenditure decisions. A capital budgeting decision may be defined as the firm's decision to invest its current funds most efficiently in the long-term in anticipation of an expected flow of benefits over a series of years. The long-term assets are those which affect the firm's operations beyond the one-year period. The firm's investment decisions would generally include expansion, acquisition, modernization and replacement of the long-term assets. Sale of a division or business (disinvestments) is also analysed as an investment decision. Activities such as change in the methods of sales distribution, or undertaking an advertisement campaign or a research and development programme have long-term implications for the firm's expenditures and benefits, and therefore, they may also be evaluated as investment decisions. It is important to note that investment in the long-term assets invariably requires funds to be tied up in the current assets such as inventories and receivables. As such, investment in fixed and current assets is one single activity. The following are the features of investment decisions :-

- The exchange of current funds for future benefits.
- The funds are invested in long-term assets.
- The future benefits will occur to the firm over a series of years. It is significant to emphasize that expenditures and benefits of an

investment should be measured in cash. In the investment analysis, it is cash flow which is important, not the accounting profit. It may also be pointed out that investment decisions affect the firm's value. The firm's value will increase if investments are profitable and add to the shareholder's wealth. Thus investment should be evaluated on the basis of a criterion which is compatible with the objective of the shareholder's wealth maximization. An investment will add to the shareholder's wealth if it yields benefits in excess of the minimum benefits as per the opportunity cost of capital. In this chapter, we assume that the investment project's opportunity cost of capital is known. We also assume that the expenditures and benefits of the investment are known with certainty.

Importance of Investment Decisions

Investment decisions require special attention because of the following reasons

- · They influence the firm's growth in the long run.
- · They affect the risk of the firm.
- · They involve commitment of large amount of funds.
- · They are irreversible, or reversible at substantial loss.
- They are among the most difficult decisions to make.

Growth

The effects of investment decisions extended into the future and have to be endured for a longer period than the consequences of the current operating expenditure. A firm's decision to invest in long-term assets has a decisive influence on the rate and direction of its growth. A wrong decision can prove disastrous for the continued survival of the firm; unwanted or unprofitable expansion of assets will result in heavy operating costs to the firm. On the other hand, inadequate investment in assets would make it difficult for the firm to compete successfully and maintain its market share. **Risk:-** A long-term assets commitment of funds may also change the risk complexity of the firm. If the adoption of an investment increases average gain but causes frequent fluctuations in its earnings, the firm will become more risky. Thus, investment decisions shape the basic character of a firm.

Funding:- Investment decisions generally involve large amount of funds which make it imperative for the firm to plan its investment programmes very carefully and make an advance arrangement for procuring finances internally or externally.

Irreversibility:- Most investment decisions are irreversible. It is difficult to find a market for such capital items once they have been required. The firm will incur heavy losses if such assets are scrapped.

Complexity:- Investment decisions are among the firm's most difficult decisions. They are an assessment of future events which are difficult to predict. It is really a complex problem to correctly estimate the future cash flow of an investment. The uncertainty in cash flow is caused by economic, political, social and technological forces.

6.4 NATURE OF CAPITAL BUDGETING

Capital budgeting decisions are of paramount importance in financial decision. Nature of capital budgeting can be judged with the help of following points:

(1) Long-term Implications: A capital budgeting decision has its effect over a long time span and inevitably affects the company's future cost structure and growth. A wrong decision can prove disastrous for the long-term survival of firm. It leads unwanted expansion of assets, which results in heavy operating cost to the firm. On the other hand, lack of investment in asset would influence the competitive position of the firm. So the capital budgeting decisions determine the future destiny of the company.

- (2) Involvement of large amount of funds: Capital budgeting decisions need substantial amount of capital outlay. This underlines the need for thoughtful, wise and correct decisions as an incorrect decision would not only result in losses but also prevent the firm from earning profit from other investments which could not be undertaken.
- (3) **Irreversible decisions:** Capital budgeting decisions in most of the cases are irreversible because it is difficult to find a market for such assets. The only way out will be to scrap the capital assets so acquired and incur heavy losses.
- (4) Risk and uncertainty: Capital budgeting decision is surrounded by great number of uncertainties. Investment is present and investment is future. The future is uncertain and full of risks. Longer the period of project, greater may be the risk and uncertainty. The estimates about cost, revenues and profits may not come true.
- (5) **Difficult to make:** Capital budgeting decision making is a difficult and complicated exercise for the management. These decisions require an over all assessment of future events which are uncertain. It is really a marathon job to estimate the future benefits and cost correctly in quantitative terms subject to the uncertainties caused by economic-political social and technological factors.

6.5 **TYPES OF INVESTMENT DECISIONS**

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

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

Expansion and Diversification

A company may add capacity to its existing product line to expand

existing operations. For example, a fertilizer company may increase its plants capacity to manufacture more urea. Expansion of a new business requires investment in new products and a new kind of production activity within the firm. If a package manufacturing company invests in a new plant and machinery to produce ball bearings, which the firm has not manufactured before, this represents expansion of new business or diversification. Sometimes a company acquires existing firms to expand its business. In either case, the firm makes investment in the expectation of additional revenue. Investments in existing or new products may also be called as revenue-expansion investments.

Replacement and Modernisation

The main objective of modernization and replacement is to improve operating efficiency and reduce costs. Costs savings will reflect in the increased profits, but the firm's revenue may remain unchanged. Assets become outdated and obsolete with technological changes. The firm must decide to replace those assets with new assets that operate more economically. If a cement company changes from semi-automatic drying equipment to fully automatic drying equipment, it is an example of modernization and replacement. Replacement decision helps to introduce more efficient and economical assets and therefore, are also called cost-reduction investments. However, replacement decisions which involve substantial modernization and technological improvements expand revenues as well as reduce costs.

Yet another useful way to classify investments is as follows :

- Mutually exclusive investments.
- Independents investments.
- Contingent investments.

Mutually Exclusive Investments

Mutually Exclusive Investments serve the same purpose and compete with each other. If one investment is undertaken, others will have to be excluded. A company may, for example, either use a more labourintensive, semi-automatic machine, or employ a more capital-intensive, highly automatic machine for production. Choosing the semi-automatic machine precludes the acceptance of the highly automatic machine.

Independent Investments

Independent investments serve different purposes and do not compete with each other. For example, a heavy engineering company may be considering expansion of its plant capacity to manufacture additional excavators and addition of new production facilities to manufacture a new product - light commercial vehicles. Depending on their profitability and availability of funds, the company can undertake both investments.

Contingent Investments

Contingent investments are dependent projects; the choice of one investment necessitates under taking one or more other investments. For example, if a company decides to build a factory in remote, backward area, it may have to invest in houses, roads, hospitals, schools etc. for employees to attract the workforce. Thus, building of factory also requires investment in facilities for employees. The total expenditure will be treated as one single investment.

6.6 INVESTMENT EVALUATION CRITERIA

Three steps are involved in the evaluation of an investment :

- Estimation of cash flows
- Estimation of the required rate of return.
- Application of a decision rule for making the choice.

The investment decision rules may be referred to as capital budgeting techniques, of investment criteria. A sound appraisal technique should be used to measure the economic worth of an investment project. The essential property of a sound technique is that it should maximize the shareholders wealth. The following other characteristics should also be possessed by sound investment evaluation criterion.

- 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 recognize 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 maximizes the shareholders wealth.
- It should be a criterion which is applicable to any conceivable investment project independent of others.

These conditions will be clarified as we discuss the features of various investment criteria in the following pages.

ACTIVITY - 1

Discuss the importance and types of Investment Decisions.

6.7 PROCESS OF CAPITAL BUDGETING

It is a complex process which may be divided in the following phases:



I. Identification of Investment Opportunities: Mere identification or possible alternatives is not all that is required in any search for investment proposals. The best proposal needs to be discovered and considered. Capital expenditure proposals should come from different segments of the enterprise. Personnel working at different levels in the organisation should be encouraged to participate in the discovery of best available proposals for capital outlays within the limits of their authority, knowledge and experience. It is better if management establishes well-defined guidelines for searching investment proposals so that no useful idea remains uncommunicated and no redundant proposal pass through the processing stage. Proposals regarding capital expenditure do not originate at the level of the controller or the budget committee. The requirements for fixed-assets expenditure are forwarded by the managers of different operating units or departments. It is, however, better if such proposals are accompanied by commercial and technical assumptions on which these are based and duly supported with details relating to the following matters; (a) Market potential for the product and yearly sales forecasts for different years. (b) Raw material requirements and their supply position. (c) Technical details relating to physical

facilities and flow diagrams. (d) Financial implications. Capital expenditure proposals may also originate at the top management level of the company. The Chief Executive may carry out survey relating to physical facilities, new market, development of new products, stage of technology and the like. Such efforts may lead to discovery of certain useful alternatives which should be screened and evaluated in the same way as originating at lower levels.

П. Assembling Investment Purposal: Economic performance like return on investment as calculated in a number of ways under different methods furnishes the most important criterion used for evaluating fixed assets investment proposals. But here also the technique to be used for evaluating economic performance should be clearly defined and communicated. There are also occasions when non-economic criteria like competition, risk, legal requirements, and social responsibilities become the over-riding considerations in evaluating different investment proposals. But it does not mean that criteria once established holds good under all circumstances and for all times to come. Relevance and reliability of criteria should be continuously reviewed. All those proposals which are conflicting and do not deserve further consideration are rejected so that only useful alternatives are analysed in detail. Economic evaluation generally plays an important role in the screening process. Along with screening, there is also the need for blending together and unifying different capital projects under the total capital expenditure programme. In this way, conflicting and duplicate proposals would be eliminated and taken together all of them contribute to the accomplishment of some higher objectives. Co-ordination will be greatly facilitated in different proposals for capital outlays are related to each other.

II. Decision Making: It would be useful if different proposals are properly classified and diagnosed before their evaluation. Investment proposals may be classified on the basis of the degree of risk involved or the extent to which they are postponable. In terms of reasons for the expenditure, the proposals may be classified whether they result in replacements, betterments or additions to assets. In the process, certain mutually exclusive and conflicting proposals will be eliminated. If the firm enjoys sufficient resources to finance all the remaining projects which are profitable, ranking them in order of preference is not a serious problem. But in reality, the number of proposals are generally larger than the amount of funds available with the firm, and the controller wants to recommend only the most desirable of them. As a matter of fact, some of the good proposals are also rejected even when they are profitable.

IV. Budgeting Capital Expenditure: Capital budgeting refers to the process of planning the investment of funds in long-term assets of the enterprise. Its purpose is to help management control capital expenditure. With the help of capital budgeting, management is able not only to reject poor investment decisions but also to select, in order of priority the projects which are most profitable and consistent with the objectives and targets set. Additions, replacement and betterments require additional funds to be committed to longterm assets, and are thus included in the capital budget which is typically prepared for a year. Capital budget is a snapshot of the plan and projects for the coming year for which approval is sought. Capital budget should be flexible so as to eliminate some of the projects already included but allow addition of new projects that deserve consideration. Inclusion of certain projects in the capital budget and its approval by the management does not mean that actual expenditure has been authorised. Rather, it offers an opportunity to look at each project even from the view point of the total organisation. There is also the need of reconcile capital budget with other budgeting activities of the enterprise for example, cash revenue and expense budgets.

V. Implementation and Controlling of Projects: Another important aspect of planning and control of capital outlays is to devise a procedure to exercise control over projects while in process. Controlling of projects in process generally falls within the purview of the financial manager. He is concerned with laying down the procedure to ensure that completion satisfies the norms with respect to cost, time and purpose of expenditure. Variations from approved plans together with reasons should promptly be reported to responsible authorities for deviations. The observations and up-to-date progress report provide sufficient information to the management about the exact stage and status of all major projects.

VI. Follow-up and Performance Report: The project manager or the manager originating the investment proposal, is responsible for submitting its completion report on the basis of which management normally proceeds to carry out the post completion audit. Follow up implies comparing and reporting actual results with the projected result of investment proposal so as to evaluate the performance and outcome in proper perspective. It is required, however, that procedures and format of follow-up should be clearly defined and communicated. Frequency and duration of audit should also be clearly indicated.

Audit personnel should also be provided with broad guidelines as to the extent of economic and non-economic evaluation they are expected to carry out. A project below a certain size may be audited locally by the staff of the departmental manager. But projects involving a number of departments or above a certain size should be audited by a certain group. The latter approach claims uniformity, efficiency and detailed review of the project as its main advantages. The post-completion audit helps managemnt in a number of ways: (a) to validate the existing capital expenditure, planning and control procedures and methods; (b) to evaluate results; (c) to highlight reasons for projects failure; and (d) to judge soundness of proposals originating at different levels in the organisaiton.

6.8 SUMMARY

Effective deployment of capital over the long-term is one of the key means by which management attempts to achieve the objective of wealth maximization. Decisions affecting investment in long-term capital projects or assets have a major impact on the future well-being of the organisation. Apart from being uncertain, such decisions, typically, involve large commitments of funds. This unit is focused on how investment decisions can be made more effective in contributing to the health and growth of the firm. The use of the methods of analysis will enable the management to rank and choose intelligently among proposals competing for essentially scarce long-term funds.

The methods presently in common use are (i) **the payback period**, (ii) the **accounting rate of return**, and (iii) **discounted cash flow** techniques.

The pay back is 'rough-and-ready' means of estimating how long it will take to recoup the original investment from the flow of cash earnings produced by the project. It suffers from a serious drawback i.e. it provides no measure of profitability. It concerns itself only with the liquidity of the investment.

The accounting rate of return is readily understood and easily determinable, but is subject to serious limitations. It averages cash

flows, and fails to distinguish between projects with long lives and those with shorter lives and between those with uneven cash flows. Moreover, it overlooks that all important time value of money. This model is adequate where the return of a project plainly far exceeds the required rate or in case of projects which are not subject to close competition for funds from other projects.

The discounted cash-flow techniques are of two basis types : (i) the net present value and (2) the internal rate of return. The former employees some desired (or required) rate of return as a discount factor in determining the present worth of the cash inflows. The investment should show an excess of present value at the desired rate over the initial cost of investment. The later is the rate of return which discounts the stream of future cash inflows to the original cost of the investment which produces them. Under many circumstances, both these DCF techniques give identical answers.

Profitability index is the percentage relationship between present value of the cash inflows discounted at the desired rate and the cost of the investment. This device offers ready comparability between projects of unlike size and duration. In general, discounted cash flows techniques provide the most reliable appraisals of alternative investment proposals. The use of present value tables makes these techniques reasonably simple to employ.

Certain limitations underlie all capital budgeting appraisals. However, the three basic factors of the quantitative analytical techniques-investment, return and time-are all, to varying degrees, the results of estimates. The estimate of future benefits is the key measurement in investment appraisal. Certain techniques like sensitivity analysis have been developed which help to narrow the margin of error of such estimates.

6.9 GLOSSARY

Accounting Rate of Return (ARR) : A measure of rate of return for evaluating capital investment proposals, derive from accrual accounting methods for income determination.

Discounted Cash Flow : A measure of rate of return for evaluating capital investment proposals based on the concept of the time value of money.

Discounting : A reduction of some future amount of money to a present value at some appropriate rate in accordance with the concept of the time value of money.

Internal Rate of Return (IRR) : That rate which equates the present value of the future cash inflows with the cost of the investment which produces them.

Net Present Value (NPV) : A techniques of discounted cash flow for capital expenditure evaluation which seeks to determine whether the present value of estimated future cash inflows at management's desired rate of return is greater or less than the cost of the proposal.

Payback Period : The length of time required to equate cash return with the initial cost of capital investment, which is determined by dividing the original investment by the annual cash inflows (cash savings after taxes).

Present Value : The amount of money which, if invested immediately at a stated rate, would yield one or more future payments reflecting the increased value of the investment in accordance with the time value of money. Conversely, it may be considered the value of a future stream of payments discounted at a given rate to the present time.

Profitability Index : The present value of future cash inflows divided by the present value of the initial outlay, also known as benefit-cost-ratio.

Salvage value : The residual value of a depreciable asset at the end of its useful life.

6.10 SELF ASSESSMENT QUESTIONS

Q1. Examine different classes of capital projects and explain why they are often approached differently?

Q2. What data you would seek before you appraise any capital or asset acquisition project?

3. Explain the concept of payback period. Why does this method enjoy a good deal of popularity among businessmen ? What are its limitations ?

6.11 LESSON END EXERCISE

2. Explain the process of capital budgeting.

2. Describe the investment decision criteria.

4. Explain the types of investment decisions.

6.12 SUGGESTED READINGS

- I.M Pandey, Financial Management, Vikas Publisher
- M.Y Khan, Financial management, Tata McGraw Hill
- Khan & Jain, Financial management, Tata McGraw Hill

CAPITAL BUDGETING AND COST OF CAPITAL

UNIT-II

Lesson No. 7

TECHNIQUES OF EVALUATING CAPITAL BUDGETING-PAYBACK PERIOD, ACCOUNTING RATE OF RETURN, NET PRESENT VALUE METHOD, INTERNAL RATE OF RETURN AND PROFITABILITY INDEX METHOD

STRUCTURE

- 7.1 Introduction
- 7.2 Objectives
- 7.3 Factors influencing investment decision
- 7.4 Rationale of capital budgeting decisions
- 7.5 Kinds of capital budgeting decisions
- 7.6 Planning of capital expenditure
- 7.7 Techniques of evaluating capital budgeting
- 7.8 Summary
- 7.9 Glossary
- 7.10 Self Assessment Questions
- 7.11 Lesson end exercise
- 7.12 Suggested Readings

7.1 INTRODUCTION

In modern times, the efficient allocation of capital resources is a most crucial function of financial management. This function involves organisation's decision to invest its resources in long-term assets like land, building, facilities, equipment, vehicles, etc. All these assets are extremely important to the firm because, in general, all the organisational profits are derived from the use of its capital in investment in assets which represent a very large commitment of financial resources, and these funds usually remain invested over a long period of time. The future development of a firm hinges on the capital investment projects, the replacement of existing capital assets, and/or the decision to abandon previously accepted undertakings which turns out to be less attractive to the organisation than was originally thought, and divesting the resources to the contemplation of new ideas and planning. For new projects such as investment decisions of a firm fall within the definition of capital budgeting or capital expenditure decisions.

7.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain the types of cost of capital;
- understand the importance;

7.3 FACTORS INFLUENCING INVESTMENT DECISION

We shall now study the factors, which have specific or general relevance to capital investment decisions. We have realised already that capital investment decisions are not governed by one or two factors, because the investment problem is not simply one of replacing an old equipment by a new one, but is concerned with replacing an existing process in a system with another process which makes the entire system more effective. We discuss below some of the relevant factors that affects investment decisions:

(i) Management outlook: If the management is progressive and has an aggressive marketing and growth outlook, it will encourage innovation and favour capital proposals which ensure better productivity or quality or both. In some industries where the product being manufactured is a simple standardised one, innovation is difficult and management would be extremely cost conscious. In contrast, in industries such as chemicals and electronics, a firm cannot survive, if it follows a policy of 'make-do' with its existing equipment. The management has to be progressive and innovation must be encouraged in such cases.

(*ii*) *Competitor's Strategy:* The competitors' strategy regarding capital investment exerts significant influence on the investment decision of a company. If competitors continue to install more equipment and succeed in turning out better products, the existence of the company not following suit would be seriously threatened. This reaction to a rival's policy regarding capital investment often forces decision on a company.

(*iii*) **Opportunities created by technological change:** Technological changes create new equipment which may represent a major change in process, so that there emerges the need for re-evaluation of existing capital equipment in a company. Such changes may justify new investments. Sometimes the old equipment which has to be replaced by new equipment as a result of technical innovation may be downgraded to some other applications. A proper evaluation of this aspect is necessary, but is often not given due consideration. In this connection, we may note that the cost of new equipment is a major factor in investment decisions. However, the management should think in terms of incremental cost, not the full accounting cost of the new equipment because cost of new equipment is partly offset by the salvage value of the replaced equipment. In such analysis an index called the disposal ratio becomes relevant.

(iv) Market forecast: Both short and long run market forecasts are influential factors in capital investment decisions. In order to participate in long-run forecast for market potential critical decisions on capital investment have to be taken.

(v) *Fiscal incentives:* Tax concessions either on new investment incomes or investment allowance allowed on new investment decisions, the method for allowing depreciation deduction allowance also influence new investment decisions.

(vi) Cash flow Budget: The analysis of cash-flow budget which shows the flow of funds into and out of the company, may affect capital investment decision in two ways. First, the analysis may indicate that a company may acquire necessary cash to purchase the equipment not immediately but after say, one year, or it may show that the purchase of capital assets now may generate the demand for major capital additions after two years and such expenditure might clash with anticipated other expenditures which cannot be postponed. Secondly, the cash flow budget shows the timing of cash flows for alternative investments and thus help management in selecting the desired investment project.

(vii) Non-economic factors: A new equipment may make the workshop a pleasant place and permit more socialising on the job. The effect would be reduced absenteeism and increased productivity. It may be difficult to evaluate the benefits in monetary terms and as such we call this as non-economic factor. Let us take one more example. Suppose the installation of a new machine ensures greater safety in operation. It is difficult to measure the resulting monetary saving through avoidance of an unknown number of injuries. Even then, these factors give tangible results and do influence investment decisions.

7.4 RATIONALE OF CAPITAL BUDGETING DECISIONS

The rationale behind the capital budgeting decisions is efficiency. A firm has to continuously invest in new plant or machinery for expansion of its operations or replace worn out machinery for maintaining and improving efficiency. The main objective of the firm is to maximise profit either by way of increased revenue or by cost reduction. Broadly, there are two types of capital budgeting decisions which expand revenue or reduce cost.

1. Investment decisions affecting revenue: It includes all those investment decisions which are expected to bring an additional revenue by raising the size of firm's total revenue. It is possible either by expansion of present operations or the development of new product in line. In both the cases fixed assets are required.

2. Investment decisions reducing costs: It includes all those decisions of the firms which reduces the total costs and leads to increase in its total earnings i.e. when an asset is worn out or becomes outdated, the firm has to decide whether to continue with it or replace it by new machine. For this, the firm evaluates the benefit in the form of reduction in operating costs and outlays that would be needed to replace old machine by new one. A firm will replace an asset only when it finds it beneficial to do so. The above decision could be followed decisions following alternative courses: i.e. Tactical investment decisions to strategic investment decisions, as briefly defined below.

3. *Tactical investment decisions:* It includes those investment decisions which generally involves a relatively small amount of funds and does not constitute a major departure from what the firm has been doing in the past.

4. *Strategic investment decisions:* Such decisions involve large sum of money and envisage major departure from what the company has been doing in the past. Acceptance of strategic investment will involve significant change in the company's expected profits and the risk to which these profits will be subject. These changes are likely to lead stockholders and creditors to revise their evaluation of the company.

7.5 KINDS OF CAPITAL BUDGETING DECISIONS

Generally the business firms are confronted with three types of capital budgeting decisions (i) the accept-reject decisions; (ii) mutually exclusive decisions; and (iii) capital rationing decisions.

(*i*) *Accept-reject decisions:* Business firm is confronted with alternative investment proposals. If the proposal is accepted, the firm incur the investment and not otherwise. Broadly, all those investment proposals which yield a rate of return greater than cost of capital are accepted and the others are rejected. Under this criterion, all the independent prospects are accepted.

(*ii*) *Mutually exclusive decisions:* It includes all those projects which compete with each other in a way that acceptance of one precludes the acceptance of other or others. Thus, some technique has to be used for selecting the best among all and eliminates other alternatives.

(*iii*) *Capital rationing decisions:* Capital budgeting decision is a simple process in those firms where fund is not the constraint, but in majority of the cases, firms have fixed capital budget. So large number of projects compete for these limited budget. So the firm ration them in a manner so as to maximise the long run returns. Thus, capital rationing refers to the situations where the firm have more acceptable investments requiring greater amount of finance than is available with the firm. It is concerned with the selection of a group of investment out of many investment proposals ranked in the descending order of the rate of return.

7.6 PLANNING OF CAPITAL EXPENDITURE

From the above discussion, it is evident that capital budgeting is concerned with activities ranging from planning the availability, allocation and control of expenditure of long-term as well as short-term investment funds. Planning of capital expenditure could be

done to finance the capital expenditure plans of the company for short-term or long-term periods and hence the long-term plan budget and short-term plan budget.

A. As regards long-term plan budget, the period covered under the planning is three to five or more years. The planning for such expenditure assumes a composite form involving all aspects of economic forecasts for the outlook of entire industry in which the company performs with its unit and forecast for the company with probable or expected coverage of market share. On the basis of this forecast, plant managers estimate their prospective capital expenditure, the marketing managers plan their market shares, the personnel managers assess the requirements for manpower and technical hands to achieve targeted production results, and the finance mangers plans, for the funds to be made available for investment taking into consideration the above requirements. The long-range capital budget is continually revised with changing economic conditions, the marketing environment, structure of wages and the inflationary pressures in the economy. It is flexible in nature and oriented towards a long-range growth planning for the company.

B. As regards short-period Capital budgeting, involving short-range planning for funds, it covers expenditure for a short duration involving the period covered within one or two years. It does not involve large capital expenditure but covers temporary need for funds for different departments within the company depending upon the degree of urgency, profitability and savings to be achieved with reference to the capital costs to be incurred. Short run capital expenditure plans get converted into long-term plans of capital expenditure. Short-term capital expenditure plan is known as operating budget and is concerned with revenues and expenses related to firms daily operations. Significance of planning for capital expenditure is derived only with major investment proposals and the use of funds over a long period. The most important factor affecting the planning horizon is the rate of change in technology in the industry. The advancement in technology may warrant capital investment for short as well as long period depending upon the changing pace of technology and technological obsolescence: long-term plan, however, helps the company to analyse its need and directions into the distant future involving a technological change.

7.7 TECHNIQUES OF EVALUATING CAPITAL BUDGETING

A number of **capital budgeting techniques** are in use in practice. They may be grouped in the following two categories :

1. Traditional Techniques/Non-discounted Cash Flow Criteria

- Payback period (PB)
- Accounting rate of Return (ARR)

2. Discounted Cash Flow (DCF) Criteria

- Net Present Value (NPV).
- Internal Rate of Return (IRR).
- Profitability Index (P1)
- Discounted payback period.

We will show in the following pages that the net present value criterion is the most valid technique of evaluating an investment project. It is generally consistent with the objective of maximizing the shareholders wealth.

(i) **Pay back :** It is the one of the simplest method to calculate the period within which the entire cost of the project will be completely recovered. It is the period within which the total cash inflows equals from the project equals the cost of the project. Cash in flows means profit after tax but before depreciation.

The payback (PB) is one of the most popular and widely recognized traditional methods of evaluating investment proposals. It is defined as the number of years required to recover the original cash outlay invested in a project. If the project generates constant annual cash inflows, the pay back period can be computed by dividing cash outlay by the annual cash inflow. That is :

Pay back =
$$\frac{\text{Initial Investment}}{\text{Annual Cash flow}} = \frac{\text{CO}}{\text{C}}$$

EXAMPLE 7.1 Assume that a project requires an outlay of Rs 50,000 and yields an annual cash inflow of Rs 12,500 for 7 years. The payback period for the project is

PB = Rs 5000 , 4 years= Rs. 12500

In case of unequal cash inflows, the payback period can be found out by adding up the cash inflows until the total equal to the initial cash outlay.

EXAMPLE 7.2 Suppose that a project requires a cash outlay of Rs 20,000 and generates cash inflows of Rs 8,000 Rs 7,000 Rs 4,000 and Rs 3,000 during the next 4 years. When we add up the cash inflow, we find that in the first three years Rs 19,000 of the original outlay is recovered. In the fourth year cash inflows generated is Rs 3,000 and only Rs 1,000 of the original outlay remains to be recovered. Assuming that the cash inflows occur evenly during the year, the time required to recover Rs 1,000 will be (Rs 1,000/Rs 3,000) × 12 months = 4 months. Thus, the payback period is 3 years and 4 months.

Acceptance Rule

Many firms use the payback period as an accept or reject criterion as well as a method of ranking projects. If the payback period calculated for a project is less than the maximum or standard payback period set by management, it would be accepted, if not, it would be rejected. As a ranking method, it gives highest ranking to the project which has the shortest payback period and lowest ranking to the project with highest payback period. Thus, if the firm has to choose among two mutually exclusive projects the project with shorter payback period will be selected.

Evaluation of Payback.

The most significant merit of payback is that it is simple to understand

and easy to calculate. The simplicity of method is considered as a virtue by the business executives which is evident from their heavy reliance on its for appraising investment proposals in practice. Another merit is that it costs less than most of the sophisticated techniques which require a lot of the analysts' time and the use of computers.

Inspite of its simplicity, the payback may not be a desirable investment criterion since it suffers from a number of serious limitations. First, it fails to take account of the cash flows earned after the payback period. For example, consider the following projects X and Y.

Cash flows (Rs)

Project	\mathbf{C}_{0}	C_1	C_2	C ₃	Payback	NPV at 10%
Х	-4,000	0	4,000	2,000	2 yrs	+ 806
Y	-4,000	2,000	2,000	0	2 yrs	-530

As per the payback rule, both the projects are equally desirable since both return the investment outlay in two years. If we assume an opportunity cost of 10 percent, Project X yields a positive net present value of Rs. 806 and Project Y yields a negative net present value of Rs. 530. As per the NPV rule, Project X should be accepted and Project Y rejected. Payback rule gave wrong result because it failed to consider Rs. 2.000 cash flow in third year for Project X. Second, it is not an appropriate method of measuring the profitability of an investment project as it does not consider all cash inflows yielded by the project. Considering Project X again, payback rule did not take into account its entire series of cash flows. Third, it fails to consider the pattern of cash inflows, i.e. magnitude and timing of cash inflows. In other words, it gives equal weights to returns of equal amounts even though they occur in different time periods. For example, compare the following projects C and D where they involve equal cash outlay and yield equal total cash inflows over equal time periods :

Cash flows (Rs.)

Project	\mathbf{C}_{0}	C_1	C_2	C ₃	Payback	NPV at 10%
С	-5,000	3,000	2,000	2,000	2 yrs	+ 881
D	-5,000	2,000	3,000	2,000	2 yrs	+ 798

Using payback period, both projects are equally desirable. But project C should be preferable as larger cash inflows' come earlier in its life. This is indicated by the NPV Rule; project C has higher NPV (Rs 881) than Project D (Rs 798) at 10 per cent opportunity cost. It should be thus clear that payback is not a measure to profitability. As such, it is dangerous to use it as a decision criterion. Fourth, administrative difficulties may be faced in determining the maximum acceptable payback period. There is no rational basis for setting a maximum payback period. It is generally a subjective decision. Fifth, the payback period method is not consistent with the objective of maximizing the market value of the firm's shares. Share values do not depend on payback periods of investment projects.

Despite its weakness, payback period method is popular in practice. Besides simplicity, the causes for its popularity are : **First**, a company can have more favourable short run effects on earnings per share by setting up a shorter standard payback period. It should, however, be remembered that this may not be a wise long-term policy as the company may have to sacrifice its future growth for current earnings. **Second**, the riskiness of the project can be tackled by having a shorter standard payback period as it may ensure guarantee against loss. A company has to invest in many projects where the cash inflows and life expectancies are highly uncertain. Under such circumstances, payback may become important, not so much as a measure of profitability but as a means of establishing an upper bound on the acceptable degree of risk. **Third**, the emphasis in payback is on the early recovery of the investment. Thus, it gives an insight into the liquidity of the project. The funds so released can be put to other uses. Let us re-emphasize that the payback is not a valid method for evaluating the acceptability of the investment projects. It can however, be used along with the 'NPV rule as a first step in roughly screening the projects. In practice, the use of DCF techniques has been increasing but payback continues to remain a popular and primary method of investment evaluation. (Exhibit 7.3)

Exhibit 7.3 Capital Budgeting Methods in practice

- In a study of the capital budgeting practices of fourteen medium to large size companies in India, it was found that all Companies, except one, used payback. With payback and/or other techniques, about two-third of companies used IRR and about two-fifths NPV.IRR was found to be the second most popular method.
- The reasons for the popularity of payback in order of significance were stated to be its simplicity to use and understand its emphasis on the early recovery of investment and focus on risk.
- It was also found that one third of companies always insisted on the computation of payback for all projects, one third for majority of projects and remaining for some of the projects. For about two thirds of the companies standard payback ranged between 3 and 5 years.
- Reasons for the secondary role of DCF techniques in India included difficult in understanding and using these techniques, lack of qualified professionals and unwillingness of top management to use DCF techniques. One large manufacturing and marketing organization mentioned that conditions of its business were such that DCF techniques were not needed. Yet another company stated that replacement projects were very frequent in the company, and it was not considered necessary to use DCF techniques for evaluating projects.

Payback Reciprocal and the Rate of Return.

Payback is considered theoretically useful in a few situations. One significant argument in favour of payback is that its reciprocal is a good approximation of the rate of return under certain conditions.

The Payback period is defined as follows :

 $Payback = \frac{Initial Investment}{Annual Cash inflows} = \frac{CO}{C}$

The formula for the present value of an annuity is given by the following equations.



Multiplying both sides by r we get

$$rC_0 = C - \frac{C[1]}{(1+r)^n}$$

Solving for r, we find

$$r = \frac{C}{C_0} \frac{C}{C_0} \frac{[1]}{(1+r)^n}$$

Where C_0 is the initial investment, C is annual cash inflow, r is rate of return and n is the life of investment.

In equation (7.3), the first right handed term is the reciprocal of the payback period. The second right-hand term is payback reciprocal multiplied by 1/(1+r)n. If n is very large or extends to infinity, the second term becomes insignificant (almost equal to zero), and we are left with the term C/Co. Thus IRR is equal to the reciprocal of payback.

The reciprocal of payback will be a close approximation of the internal rate of return if the following two conditions are satisfied.

- The life of the project is large or at least twice the payback period.
- The project generates equal annual cash inflows.

The payback reciprocal is a useful technique to quickly estimate the true rate of return. But its major limitation is that all the investment projects do not satisfy the conditions on which this method is based. When the useful life of the project is not at least twice the payback period, the payback reciprocal will always exceed the rate of return. Similarly, it cannot be used as a approximation of the rate of return if the project yields even cash inflows.

(ii) Discounted Cash Flow Techniques

One of the serious objections to the payback method is that it does not discount the cash flows for calculating the payback period. Some people, therefore, discount cash flows and calculate the discounted payback period. The number of periods taken in recovering the investment outlay on the present value basis is called the discounted payback period. The discounted payback period still fails to consider the cash flow occurring after the payback period.

Let us consider an example. Projects P and Q involve the same outlay of Rs 4,000 each. The opportunity cost of capital may be assumed as 10 per cent. The cash flows of the projects and their discounted payback periods are shown in Table 7.1. The projects are indicated of same desirability by the simple payback period. When cash flows are discounted to calculate the discounted payback period. Project P recovers the investment outlay faster than Project Q, and therefore, it would be preferred over Project Q. Discounted payback period for a period will be always higher than simple payback period because its calculation is based on the discounted cash flows. Discounted payback rule is better as it does discount the cash flows until the outlay is recovered. But it does not help much. It does not take into consideration the entire series of cash flows. It can be seen in our example that if we use the NPV rule, Project Q (with higher discounted payback period) is better.

	Table 7	.1 Dis	countee	d Payb	back	Illustrate	d	••••
		Cash	flows	(Rs)		Simple	Discounte	d
NPV	V at							
						Pay-	back	10%
						back	<u>period</u>	
	Со	C1	C2	C3	C4			
Р	-4,000	3,000	1,000	1,000	1,000	0 2yrs	-	-
PV	of-4,000	2,727	826	751	683	3 -	2.6 yrs	+ 987
cash	flows							
Q	-4,000	0	4,000	1,000	2,000	0 2 yrs	-	-
PV	of-4,000	0	3,304	751	1,360	6 -	2.9 yrs	+1,421

Cash flows

(iii) Accounting Rate of Return Method

The accounting rate of return (ARR) also known as the return on investment (ROI), uses accounting information, as revealed by financial statements, to measure the profitability of an investment. The accounting rate of return is found out by dividing the average after-tax profit by the average investment. The average investment would be equal to half of the original investment if it is depreciated constantly. Alternatively, it can be found out dividing the total of the investment's book values after depreciation by the life of the project.

EXAMPLE 7.4 A project will cost Rs. 40,000. Its stream of earnings before depreciation, interest and taxes (EBDIT) during first year through five years is expected to be Rs. 10,000 Rs. 12,000 Rs. 14,000, Rs. 16,000 and Rs. 20,000. Assume a 50 percent tax rate and depreciation on straight-line basis. Project's ARR is computed in Table 7.2

Rs.

Table 7.2 Calculation of Accounting Rate of Returns

Period 1 2 3 4 5 Average Earnings before depreciation, interest and taxes (EBDIT) 10,00012,00014,00016,000 20,000 14,400 Depreciation 8,000 8,000 8,000 8,000 8,000 8,000 Earnings before interest and taxes (EBIT) 2,000 4,000 6,000 8,000 12,000 12,000 Taxes at 50% 1,000 2,000 3,000 4,000 6,000 6,400 Earnings before interest and after taxes (EBIT (I-T) 1,000 2,000 3,000 4,000 6,000 3.200 Book value of investment : Beginning 40,000 32,000 24,00016,000 8,000 32.00 Average 36,000 28,000 20,00012,000 4,000 20,000 Accounting rate of Return = $3200/20000 \times 100 = 16$ percent A variation of the ARR method is to divide average earnings after taxes by the original cost of the project instead of the average cost. Thus, using this version, the ARR in illustration 11.6 would be : Rs 3200, Rs $40000 \times 100 = 8$ per cent. This version of the ARR method is less consistent as earnings are averaged but investment is not.

Acceptance Rule

As an accept or reject criterion, this method will accept all those projects whose ARR is higher than the minimum rate established by the management and reject those projects which have ARR less than the minimum rate. This method would rank a project as number one if it has highest ARR and lowest rank would be assigned to the project with lowest ARR.

Evaluation of ARR Method.

The ARR method may claim some merits. **First**, it is simple to understand and use. **Second**, the ARR can be readily calculated from the accounting data. Unlike in the NPV and IRR methods, no adjustments are required to arrive at cash flows of the project. **Third** the ARR rule incorporates the entire steam of income in calculating the project's profitability.

The ARR is a method commonly understood by accountants, and frequently used as a performance measure. As a decision criterion, however it has serious shortcoming. **First**, it uses accounting profits, not cash flows, in appraising the projects. Accounting profits are based on arbitrary assumptions and choices and also include non cash items. It is, therefore, inappropriate to rely on them for measuring the acceptability of the investment projects. Second, the average of income ignores the time value of money. In fact, this procedure gives more weightage to the distant receipts. Third the firm employing the ARR rules uses an arbitrary cut off yardstick. Generally the yardstick is the firm's current return on its assets (book value). Because of this, the growth companies earning very high rates on their existing assets may reject profitable projects (i.e. with positive NPV's) and the less profitable companies may accept bad projects (i.e. with negative NPV's).

The ARR method continues to be used as a performance evaluation and control measure. But its use as an investment criterion is certainly undesirable. It may lead to unprofitable allocation of capital.

ACTIVITY -1

Compute the rate of return of the following projects : Cash Flows (Rs)

Project	C_0	C_1	C_2	C ₃
Х	- 20,000	8,326	8,326	8,326
Y	- 20,000	0	0	24978

Which project would you recommend ? Why ?

(IV) Net Present Value (NPV) Method :

It is the best method for the evaluation of an investment proposal. This method takes into account the time value of money.

The net present value (NPV) method is the classic economic method evaluating the investment proposals. It is one of the discounted cash flow (DCF) techniques explicitly recognizing the time value of money. It correctly postulates that cash flows arising at different time periods differ in value and are comparable only when their equivalents present values are found out. The following steps are involved in the calculation of NPV :

- Cash flows of the investment project should be forecasted based on realistic assumptions.
- Appropriate discount rate should be identified to discount the forecasted cash flows. The appropriate discount rate is the firm's opportunity cost of capital, which is equal to the required rate of return expected by investors on investments of equivalent risk.
- Present value of cash flows should be calculated using opportunity cost of capital as the discount rate.

• Net present value should be found out by subtracting present value of cash outflows from present value of cash inflows. The project should be accepted if NPV is positive (i.e. NPV>0).

Let us consider an example 7.5

EXAMPLE 7.5 Assume that Project X costs Rs. 2,500 now and is expected to generate year-end cash inflows of Rs. 900, Rs. 800, Rs. 700, Rs. 600 and Rs. 500 in years 1 through 5. The opportunity cost of capital may be assumed to be 10 per cent.

The net present value for Project X can be calculated by referring to the present value table. The calculations are shown below :

$$NPV = \frac{Rs.900}{(1+0.10)} + \frac{Rs.800}{(1+0.10)^2} + \frac{Rs.700}{(1+0.10)^3} + \frac{Rs.600}{(1+0.10)^4} + \frac{Rs.500}{(1+0.10)^5} = Rs.2.500$$

NPV = [Rs. 900 (PVF_{1.0.10}) + Rs. 800 (PVF_{2.0.10}) + Rs. 700 (PVF_{3.0.10}) + Rs. 600(PVF_{4.0.10}) + Rs. 500 (PVF_{5.0.10}) - 2.500]

NPV = [Rs. 900×0.909 + Rs. 800×0.8 [26+Rs. 700×0.751+Rs. 600×0.683

+ Rs. 50
$$[0 \times 0.620]$$
 - Rs. 2.500
NPV = Rs. 2, 725 - Rs. 2, 500 = + Rs. 225

Project X's present value of cash inflows (Rs 2,725) is greater than that of cash outflow (Rs. 2,500). Thus, it generates a positive net present value (NPV = + Rs. 225) project X adds to the wealth of owners; therefore, it should be accepted.

The formula for the net present value can be written as follows :----

NPV =
$$\frac{C1}{(1+k)} + \frac{C2}{(1+k)2} + \frac{C3 + \dots + Cn}{(1+k)3 \quad (1+k)n} - Co$$

$$NPV = \sum_{t=1}^{n} \frac{C_t}{(1+k)^1} - Co$$
 3.1

Where C1, C2 represent net cash inflows in year 1, 2, ..., k is the opportunity cost of capital, Co is the initial cost of the investment and n is the expected life of the investment. It should be noted that the cost of capital, k, is assumed to be known and is constant.

ACTIVITY - 2

The following are the net cash flows of an investment project :

Cash Flows (Rs)

CO	C ₁	C ₂
-5400	3600	14,400

Calculate the net Present Value of the project at discount rates of 0, 10, 40, 50 percent.

Importance of NPV

A question may be raised why should a financial manager invest Rs. 2,500 in Project x? Project X should be undertaken if it is best for the company's shareholders; they would like their shares to be as valuable as possible. Let us assume that the total market value of hypothetical company is Rs. 10,000 which includes Rs 2,500 cash that can be invested in Project X. Thus the value of the company's assets must be Rs. 7,500. The company has to decide whether it should spend cash and accept Project X or to keep the cash and reject Project X. Clearly Project X is desirable since its PV (Rs. 2,725) is greater than Rs. 2,500 cash. If project X is accepted, the total market value of the firm will be : Rs. 7,500 + PV of Project X – Rs. 7,500 + Rs. 2,725 = 10,225 : that is an increase by Rs 225 the company's total market value would remain only Rs. 10,000 if Project X is rejected.

Why should the PV of Project X reflect in the company's market value? To answer this question, let us assume that a new company X with Project X as the only asset is formed. What is the value of the company? Since Project X is the only asset of Company X, the expected dividends would be equal to the forecasted cash flows from Project X. Investors would discount the forecasted dividends at a rate of return expected on securities equivalent in risk to company X. The rate used by investors to discount dividends is exactly the rate which we should use to discount cash flows of Project X. The calculation of the PV of Project X is a replication of the process which shareholders will be following in valuing the shares of Company X. Once we find out the value of Project X as a separate venture, we can add it to the value of other assets to find out the portfolio value.

The difficult part in the calculation of the PV of an investment project is the precise measurement of the discount rate. Funds available with a company can either be invested in projects or given to shareholders. Shareholders can invest funds distributed to them in financial assets. Therefore, the discount rate is opportunity cost of investing in projects rather than in capital markets. Obviously, the opportunity cost concept makes sense when financial assets are of equivalent risk as compared to the project.

An alternate interpretation of the positive net present value of an investment is that it represents the maximum amount of a firm would be ready to pay for purchasing the opportunity of making investment, or the amount at which the firm would be willing to sell the right to invest without being financially worse-off. The net present value (Rs. 225) can also be interpreted to represent the amount the firm could raise at the required rate of return (10%), in addition to the initial cash outlay (Rs.2,500), to distribute immediately to its shareholders and by the end of the project's life to have paid off all the capital raised and return on it. The point is illustrated by the calculation shown in Table 7.3

	Amount	Return on	Total	Repayment	Balance
	Outstanding	Outstanding	Amount	from Cash	Outstanding
	in the	Amount at	Outstanding	g at the End.	
	Beginning	10%	Flows		
Year	Rs.	Rs.	Rs.	Rs.	Rs.
1.	2,725.00	272.50	2,997.50	900	2,097.50
2.	2,097.50	209.75	2,307.25	800	1,507.25
3.	1,507.25	150.73	1,657.98	700	957.98
4.	957.98	95.80	1,053.78	600	453.78
5.	453.78	45.38	499.16	500	$(0.84)^{*}$

Calculations in Table 7.3 are based on the Assumption that the firm chooses to receive the cash benefit resulting from the investment in the year it is made. Any pattern of cash receipts, such that the net present value is equal to Rs. 225, can be selected. Thus, if the firm raises Rs. 2,500 (the initial outlay) instead of Rs.2,725 (initial outlay plus net present value) at 10 percent rate of return, at the end of fifth year after having paid the principal sum together with interest, it would be left with Rs. 363, whose present value at the beginning of the first year at 10 percent discount rate is Rs. 225. It should be noted that the gain to shareholders would be more if the rate of raising money is less than 10 percent.

Acceptance Rule

It should be clear that the acceptance rule using the NPV method is to accept the investment project if its net present value is positive (NPV>0) and to reject it if the net present value is negative (NPV<0). Positive NPVs contribute to the net wealth of the shareholders which should result in the increased price of a firm's share. The positive net present value will result only if the project generates cash inflows at
a rate higher than the opportunity cost of capital. A project may be accepted if NPV=0. A zero NPV implies that project generates cash flows at a rate higher than the opportunity cost of capital. Thus, the NVP acceptance rules are :

- Accept if NPV>0
- Reject if NOV<0
- · May accept if NPV=0

The NPV method can be used to select between mutually exclusive projects: the one with the higher NPV should be selected. Using the NPV method, projects would be ranked in order of net present values; that is, first rank will be given to the project with highest positive net present value and so on.

(v) Profitablity index/Benefit Cost Ratio Method

Yet another time-adjusted method of evaluating the investment proposals is the benefit-cost (B/C) ratio or profitability index (PI). It is the ratio of the present value of cash inflows, at the required rate of return, to the initial cash outflow of the investment. It may be gross or net; net being simply gross minus one. The formula to calculate benefit - cost ratio or profitability index is as follows :

$$PI = \frac{PV \text{ of cash inflows}}{\text{Initial cash outlay}} = \frac{PV(C1)}{C_0} = \frac{C1}{(1+K)1} - CO$$
7.1

EXAMPLE 7.6 The initial cash outlay of a project is Rs. 1,00,000 and it can generate cash inflow of Rs 40,000 Rs 30,000, Rs 50,000 and Rs. 20,000 in year 1 through 4. Assume a 10 percent rate of discount. The PV of cash inflows at 10 per cent discount rate is :

= Rs
$$40,000 \times (PVF1,0.10) + Rs 30,000 (PVF 2,0.10) + Rs 50,000$$

$$(PVF 3,0.10) + Rs 20,000 (PVF 4,0.10)$$

= Rs 40,000 × 0.909 + Rs 30,000 × 0.826 + Rs 50,000 × 0.751 +
Rs 20,000 × 0.683

 $NPV = Rs \ 112.350 \ -Rs \ 100.000 = Rs \ 12.350$

$$PI = \frac{Rs \ 1,12,350}{Rs \ 1,10,000} = 1.1235.$$

Acceptance Rule

The following are the PI acceptance rules.

- Accept if PI>1
- Reject if PI<1
- May accept if PI=1

When PI is greater than one, then the project will have positive net present value.

Evaluation of PI Method

Like the NPV and IRR rules, PI is a conceptually sound method of appraising investment projects. It recognizes the time value of money. It is a variation of the NPV method, and requires the same computations as the NPV method. In the PI method, since the present value of cash inflows is divided by the initial cash outflow, it is a relative measure of a project's profitability.

(vi) Internal rate of Return Method

The second discounted cash flow (DCF) or time-adjusted method for appraising capital investment decisions is the internal rate of return method (IRR). This technique is also known as yield on investment, marginal efficiency of capital, marginal productivity of capital, rate of return, timeadjusted rate of return and so on. Like the present value method, the IRR method also considers the time value of money by discounting the cash streams. The basis of the discount factor, however, is different in both cases. In the case of the present value method, the discount rate is the required rate of return and being a predetermined rate, usually the cost of capital, its determinants are external to the proposal under consideration. The IRR, on the other hand, is based on facts which are internal to the proposal. In other words, while arriving at the required rate of return for finding out present values the flows-inflows as well as outflows are not considered. But the IRR depends entirely on the initial outlay and the cash proceeds of the project which is being evaluated for acceptance or rejection. It is, therefore, appropriately referred to as internal rate of return.

The internal rate of return is usually the rate of return that a project earns. It is defined as the discount rate which equates the aggregate present value of the net cash inflows (CFAT) with the aggregate present value of cash outflows of a project. In other words, it is that rate which gives the project NPV of zero.

Accept-Reject Decision

The use of the IRR, as a criterion to accept capital investment decisions, involves a comparison of the actual IRR with the required rate of return also known as the cut-off rate or hurdle rate. The project would qualify to be accepted if the IRR (r) exceeds the cut-off rate (k). If the IRR and the required rate of return are equal, the firm is indifferent as to whether to accept or reject the project.

Computation

Unlike the NPV method, calculating the value of IRR is more difficult. The procedure will depend on whether the cash flows are annuity or mixed stream. *i.e.* If cash flows are same every year throughout the life of the project.

Annuities

The following steps are taken in determining IRR for an annuity :

- (1) Determine the pay back period of the proposed investment.
- (2) In Table present value of an annuity look for year that is equal to or closest to the life of the project.
- (3) In the year row, find two PV values or discount factor (DFr) closest to PB period but one bigger and other smaller than it.
- (4) From the top row of the table note interest rates (r) corresponding to these PV values (DFr).
- (5) Determine actual IRR by interpolation. This can be done following equations :-

$$IRR = r - \frac{PB - DF_{r}}{Df_{rL} - DF_{rH}}$$
 7.2

where

PB = Pay back period

 DF_r = Discount factor for interest rate r. DF_{rL} = Discount factor for lower interest rate. DF_{rH} = Discount factor for higher interest rate. r = Either of the two interest rates used in the formula.

Alternatively,

IRR =
$$r - \frac{PVCO - PVCFAT}{\Delta PV} \times \Delta r$$
 7.3

where PV_{co} = Present value of cash outlay

 $PVCFAT = Present value of cash inflows (DF_r x annuity)$

r = Either of the two interest rates are used in the formula.

 Δr = Difference in interest rates

 ΔPV = Difference in calculated present values of inflows The computations are shown in example 7.4

EXAMPLE 7.7

A projects costs of Rs. 36,000 and is expected to generate cash inflows of Rs. 11,200 annually for 5 years. Calculate the IRR of the project.

Solution

- (1) The pay pack period is 3.214 (Rs. 36,000 , Rs. 11,200).
- (2) According to PV Table, discount factors closest to 3.214 for 5 years are 3.274 (16% rate of interest) and 3.199 (17% rate of interest). The actual value of IRR which lies between 16% and 17% can, now, be determined using equation 7.4.

Substituting the Values in equation 3.12 we get :

IRR =
$$16 - \frac{3.214 - 3.274}{3.274 - 3.199}$$

= $16 - \frac{-0.06}{0.075}$
= $16 + 0.8 = 16.8\%$

alternatively (starting with the higher rate)

IRR =
$$17 - \frac{3.214 - 3.199}{3.274 - 3.199}$$

= $17 - \frac{0.015}{0.075}$
= $17 - 0.2 = 16.8\%$

Instead of using direct method, we may find the actual IRR by applying the interpolation formula to present values of cash inflows and outflows (Equation 3.13). Here, again, it is immaterial whether we start with lower or higher rate.

PVCFAT (16%) = Rs.11,200 × 3.274 = Rs. 35,668.8PVCFAT (17%) = Rs. $11,200 \times 3.199$ = Rs. 35,828.8IRR = 16 - 36,000 - 36,668.8 $36,668.8 - 35,828.8 \times 1$ = 16 - (-6668.8-840) = 16 + 0.8 = 16.8%)

Alternatively (starting with the higher rate)

IRR = r -
$$\frac{(PVCO-PVCFAT)}{PV} \times r$$

IRR = 17 - $\frac{36,000-35,828.8}{840} \times 1$
= 17- 0.20 = 16.8%

For a Mixed Stream of Cash Flows

Calculating the IRR for a mixed stream of cash flows is more tedious. In a mixed stream of cash flows, the cash flows in various years are uneven or unequal. One way to simplify the process is to use a "fake annuity" as a starting point. The following procedure is a useful guide to calculating IRR :

- (1) Calculate the average annual cash inflow to get a "fake annuity".
- (2) Determine "fake pay back period" dividing the initial outlay by the average annual CFAT determined in step 1.
- (3) Look for the factor, in Table A-4, closest to the fake pay back value in the same manner as in the case of annuity. The result will be a very rough approximation of the IRR, based on the assumption that the mixed stream is an annuity (fake annuity).

- (4) Adjust subjectively the IRR obtained in step 3 by comparing the pattern of average annual cash inflows (as per step 1) to the actual mixed stream of cash flows. If the actual cash flow stream happens to be higher in the initial years of the project's life than the average stream, adjust the IRR a few percentage points upward. The reason is obvious as the greater recovery of funds in the earlier years is likely to give a higher yield rate (IRR). Conversely, if in the early years the actual cash inflows are below the average, adjust the IRR a few percentage points downward. If the average cash flows pattern seem fairly close to the actual pattern, no adjustment is to be made.
- (5) Find out the present value of the mixed cash flows, taking the IRR as the discount rate as estimated in step 4.
- (6) Calculate the PV, using the discount rate. If the PV of CFAT equals the initial outlay, i.e. NPV is zero, it is the IRR. Otherwise, repeat step 5. Stop once two consecutive discount rates that cause the NPV to be positive and negative, respectively has been calculated. Whichever of these two rates causes the NPV to be closest to zero is the IRR to the nearest 1%.
- (7) The actual value can be ascertained by the method of interpolation as in the case of an annuity.

EXAMPLE 7.8

Determine the internal rate of return from the following data of two Machines A and B :

	Machine A	Machine B		
Cost	Rs. 56,125	Rs. 56,125		
Annual estimated income after				
Depreciation and income	e tax :			

Ist year	3,375	11,375
IInd year	5,375	9,375
IIIrd year	7,375	7,375
IVth year	9,375	5,375
Vth year	11,375	3,375
	36,875	36,875
Estimated life in years	5	5
Estimated salvage value	3,000	3,000
Average income tax rate	55%	55%

Depreciation has been charged on straight line basis.

Solution :

- The sum of cash inflows of both the machines is Rs. 93,000 which when dividend by the economic life of the machine (5 years), results in a "fake annuity" of Rs.18,600.
- (2) Dividing the initial outlay of Rs. 56,125 by Rs. 18,600, we have "fake average pay back period" of 3.017 years (Rs. 56,125 , Rs. 18,600).
- (3) In PV Table, factor closest to 3.017 for 5 years is 2.991 for a rate of 20%.
- (4) Since the actual cash flows in the earlier years are greater than the average cash flows of Rs. 18,600 in machine B, a subjective increase of, say, 2% is made. This makes an estimated rate of IRR 22% for machine B. In the case of machine A since cash inflows in the initial years are smaller than the average cash flows, a subjective decrease of, say, 2% is made. This makes the estimated IRR rate 18% for machine A.
- (5) Using the PV factors for 22% (Machine B) and 18% (Machine A) from Table for years 1-5,

(6) Since the NPVs is negative for both the machines, the discount rate should be subsequently lowered. In case of the machine A the difference is of Rs. 572 whereas in machine B the difference is Rs. 1,121. Therefore,

	Μ	achine A		Machi	ne B	
Year	CFAT	PV factor at 18%	Total PV	CFAT	PV factor at 22%	Total PV
1.	14,000	0.847	11,858	22,000	0.820	18,040
2.	16,000	0.718	11,488	20,000	0.672	13,440
3.	18,000	0.609	10,962	18,000	0.551	9,918
4.	20,000	0.516	10,320	16,000	0.451	7,216
5.	<u>25,000</u>	0.437	<u>10,925</u>	<u>17,000</u>	0.370	<u>6,290</u>
	<u>93,000</u>		55,553	93,000		<u>54,904</u>
Less	initial in	vestment		- <u>56,125</u>		- <u>56,125</u>
NPV			-572			-1,221

in the former case the discount rate is lowered by 1% (the new discount rate being 17%) whereas in the case of machine B this is lowered by 2% (the new discount rate being 20%).

The calculations given in Table 6.4 show that the NPV at discount rate of 17% is Rs. 853 (machine A).

Machine A					Machi	ne B
Year	CFATPV	factor	Total	CFAT	PV factor	Total
	at	18%	PV		at 22%	PV
1.	14,000	0.855	11,970	22,000	0.833	18,326
2.	16,000	0.731	11,696	20,000	0.694	13,880

3.	18,000	0.624	11	,232	18,000	0.579	10,442
4.	20,000	0.534	10	,680	16,000	0.484	7,712
5.	25,000	0.456	<u>11</u>	,400	<u>17,000</u>	0.442	<u>6,834</u>
PV of cash inflows 56,978				5,978			57,174
Less	: initial out	lay	- <u>56</u>	5 <u>,125</u>			- <u>56,125</u>
Net p	oresent value	e l	Rs.	853			1,049

Therefore, a higher discount rate should be tried. But our previous calculations suggest that NPV for an IRR of 18% of this machine is - Rs. 572. Since 17% and 18% are consecutive discount rates that give positive and negative net present values, interpolation method can be applied to find the actual IRR which will be between 17% and 18%.

The interpolation method to find out the IRR can be employed according to Eq. 7.3

Thus

$$IRR = rL + \frac{b P V_{CFAT} - P V_{CO} g}{\Delta P V} \times r$$

(i) For Machine A

,

IRR =
$$17 + \frac{\text{Rs.56,125} - \text{Rs.56,978}}{\text{Rs.56,978} - \text{Rs.55,553} \times 1}$$

= $17 + \frac{853.0}{1,425}$

= 17 + 0.6 = 17.6%

(ii) For Machine B

IRR =
$$20 - \frac{\text{Rs. } 56,125 - \text{Rs. } 57,174}{\text{Rs. } 57,174 - \text{Rs. } 54,904 \times 2}$$

= $20 + \frac{1,049}{2,270 \times 2}$
= $20 + 0.9 = 20.9\%$

The correctness of the above procedure can be verified by calculating the net present value by using the IRR. The results of our exercise for machine B, for example, are summarized in Table 6.5.

Year	CFAT	Present value	Total present
		Factor at 21%	Value
1	2	3	4
1.	22,000	0.826	18,172
2.	20,000	0.683	13,660
3.	18,000	0.564	10,152
4.	16,000	0.467	7,472
5.	17,000	0.386	<u>6,562</u>
PV of c	ash inflows	56,017	
Less : in	nitial outlay	- <u>56,125</u>	
Net pres	sent value		- 107

The IRR we are seeking is the discount rate for which the NPV is closest to zero. For machine B, a rate of 21% causes the NPV to closest to zero. The actual IRR would be slightly less than 21%.

ACTIVITY - 3

A project costs Rs. 81,000 and is expected to generate net cash inflow of Rs. 40,000 Rs. 35,000 and Rs, 30,000 over its life of 3 years. Calculate the internal rate of return of the project.

Evaluation of IRR

The IRR method is a theoretically correct technique to evaluate capital expenditure decisions. It possesses the advantages which are offered by the NPV criterion such as, (i) It considers the time value of money, (ii) It takes into account the total cash inflows and outflows. In addition, the IRR is easier to understand. Business executives and non-technical people understand the concept of IRR much more readily than they understand the concept of NPV. They may not be following the definition of IRR in terms of the equation but they are well aware of its usual meeting in terms of the rate of return on investment. For instance, business executives will understand the investment proposal in a better way if told that IRR of machine B is 21% and k is 10% instead of saying that the NPV of machine B is Rs. 15,396.

Another merit of IRR is that it does not use the concept of the required rate of return (or the cost of capital). It itself provides a rate of return which is indicative of the profitability of the proposal. The cost of capital, of course, enters the calculations later on.

Finally, it is consistent with the over-all objective of maximizing shareholders' wealth. It may be recalled that according to IRR, as a decision criterion, the acceptance or otherwise of a project is based on a comparison of the IRR with the required rate of return. The required rate of return is, by definition, the minimum rate which investors expect on their investment. In other words, if the actual IRR of an investment proposal is equal to the rate expected by the investors, the share prices will remain unchanged. Since, with IRR, only such projects are accepted as have IRR> required rate, the share price will tend to rise. This will naturally lead to the maximization of shareholder's wealth.

In theoretically soundness notwithstanding, the IRR suffers from serious limitations, **First**, it involves tedious calculations. As shown above, it generally involves complicated computational problems. **Secondly**,

another flaw of IRR is that it produces multiple rates which can be confusing. This situation usually arises in the case of non-conventional projects. This aspect is further developed later in this chapter.

Thirdly, in evaluating mutually exclusive proposals, the project with the highest IRR would be picked up to the exclusion of all others. However, in practice, it may not turn out to be one which is the most profitable and consistent with the objective of the firm, i.e. maximization of wealth of the shareholders. This aspect has also been discussed in detail later in this chapter.

Finally, under the IRR method, it is assumed that all intermediate cash flows are re-invested at the IRR. In our example, the IRR rates for machines. A and B are 17.6% and 20.9% respectively. In operational terms, 17.6% IRR signifies that all cash inflows of machine A can be re-invested at 17.6% whereas that of B at 20.9%. It is rather ridiculous to think that the same firm has the ability to re-invest the cash flows at different rates.

There is no difference in the "quality of cash" received either from project A or B. The re-investment rate assumption under the IRR method is, therefore, very unrealistic. Moreover, it is not safe to assume always that intermediate cash flows from the project will be re-invested at all. A portion of cash inflows may be paid out as dividends. Likewise, a portion of it may be tied up in current assets such as stocks, debtors or cash. Clearly, the firm will get a wrong picture of the capital project if it is not safe to assume, as is often done, that they will be reinvested at the same rate of return as the company is currently earning on its capital (IRR) or at the current cost of capital, k. In order to have correct and reliable results it is obvious, therefore, that they should be based on realistic estimates of the interest rate (if any) at which income will be re-invested. Terminal value takes care of this aspect.

7.8 SUMMARY

Capital Budgeting refers to long-term planning for proposed capital outlays and their financing. Capital Budgeting may also be defined as "the firms' decision to invest its current fund more efficiently in long term activities in anticipation of an expected flow of future benefit over a series of years. – Capital Rationing helps the firm to select the combination of investment projects that will be within the specified limits of investments to be made during a given period of time and at the same time provide greatest profitability. – Pay Back technique estimates the time required by the project to recover, through cash inflows, the firms initial outlay.

Pay back period = Initial Investment / Annual cash inflows

Average Rate of Return method is designated to consider the relative profitability of different capital investment proposals as the basis for ranking them – the fact neglected by the payout period technique.Net Present Value: The cash outflows and inflows associated with each project are ascertained first and both are reduced to the present values at the rate of return acceptable to the management. The rate of return is either cost of capital of the firm or the opportunity cost of capital to be invested in the project. Internal Rate of Return: The internal rate of return refers to the rate which equates the present value of cash inflows and present value of cash outflows. Profitability Index (PI): Profitability Index is defined as the ratio of present value of the future cash benefits at the required rate of return to the initial cash outflow of the investment.

7.9 GLOSSARY

- **Bonds** : are debt instruments involving two parties- the borrower and the lender.
- **Term loans:** are borrowings made from banks and financial institutions. Such term loans may be for the medium to long term with repayment period ranging from 1 to 30 years.
- **Long Term Finance**: The funds which are not paid back within a period of less than a year are referred to as long term finance.

7.10 SELF ASSESSMENT QUESTIONS

1. Explain the various factors influencing investment decisions.

2. Describe in detail NPV method.

7.11 LESSON END EXERCISE

1. Explain different methods of appraising project profitability. Which method is considered to be the best?

2. Distinguish between Internal Rate of Return and Net Present Value techniques. Which method would you recommend for evaluating investment? Explain.

3. Capital Budgeting models are used to evaluate a wide variety of capital expenditure decisions. Comment on this statement and enunciate some of the important expenditure decisions to which capital budgeting technique can be applied.

7.12 SUGGESTED READINGS

- I.M.Pandey, Financial Management, Vikas Publisher.
- M.Y.Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

CAPITAL BUDGETING AND COST OF CAPITAL UNIT-2 Lesson No. 8

COST OF CAPITAL- CONCEPT AND IMPORTANCE

STRUCTURE

- 8.1 Introduction
- 8.2 Objectives
- 8.3 Concept of cost of capital
- 8.4 Importance of cost of capital
- 8.5 Assumptions of cost of capital
- 8.6 Cost of capital and its implications in capital budgeting decisions
- 8.7 Summary
- 8.8 Glossary
- 8.9 Self Assessment Questions
- 8.10 Lesson end exercise
- 8.11 Suggested Readings

8.1 INTRODUCTION

The cost of capital plays a significant role in capital budgeting decisions. A firm raises funds from various sources, which are called the components of capital. Different sources of fund or the components of capital have different costs. For example, the cost of raising funds through issuing equity shares is different from that of raising funds through issuing preference shares. The cost of each source is the specific cost of that source, the average of which gives the overall cost for acquir-ing capital. The firm

invests the funds in various assets. So it should earn returns that are higher than the cost of raising the funds. In this sense the minimum return a firm earns must be equal to the cost of rais-ing the fund. So the cost of capital may be viewed from two viewpoints—acquisition of funds and application of funds.

8.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain the types of cost of capital;
- understand the importance;
- compute the cost of equity.

8.3 CONCEPT OF COST OF CAPITAL

The term cost of capital refers to the minimum rate of return a firm must earn on its investments. This is in consonance with the firm's overall object of wealth maximization. Cost of capital is a complex, controversial but significant concept in financial management.

The following definitions give clarity management.

Hamption J.: The cost of capital may be defined as "the rate of return the firm requires from investment in order to increase the value of the firm in the market place".

James C. Van Horne: The cost of capital is "a cut-off rate for the allocation of capital to investments of projects. It is the rate of return on a project that will leave unchanged the market price of the stock".

Soloman Ezra:"Cost of Capital is the minimum required rate of earinings or the cutoff rate of capital expenditure".

`The cost of capital is the required rate of return that a firm must achieve in order to cover the cost of generating funds in the marketplace. It is used to evaluate new projects of a company as it is the minimum return that investors expect for providing capital to the company, thus setting a benchmark that a new project has to meet. It is clear from the above definitions that the cast of capital is that minimum rate of return which a firm is expected to earn on its investments so that the market value of its share is maintained. We can also conclude from the above definitions that there are three basic aspects of the concept of cost of capital:

- i) Not a cost as such: In fast the cost of capital is not a cost as such, it is the rate of return that a firm requires to earn from its projects.
- **ii**) **It is the minimum rate of return:** A firm's cost of capital is that minimum rate of return which will at least maintain the market value of the share.
- iii) It comprises three components:

8.4 IMPORTANCE OF COST OF CAPITAL

Computation of cost of capital is a very important part of the financial management to decide the capital structure of the business concern.

1. Importance to Capital Budgeting Decision; Capital budgeting decision largely depends on the cost of capital of each source. According to net present value method, present value of cash inflow must be more than the present value of cash outflow. Hence, cost of capital is used to make capital budgeting decision.

2. Importance to Capital Structure Decision: Capital structure is the mix or proportion of the different kinds of long term securities. A firm uses particular type of sources if the cost of capital is suitable. Hence, cost of capital helps to take decision regarding structure.

3. Importance to Evolution of Financial Performance: Cost of capital is one of the important factor in determining claim which affects the capital budgeting, capital structure and value of the firm. Hence, it helps to evaluate the financial performance of the firm. **4. Importance to Other Financial Decisions:** Apart from the above points, cost of capital is also used in some other areas such as, market value of share, earning capacity of securities etc. hence; it plays a major part in the financial management.

8.5 ASSUMPTIONS OF COST OF CAPITAL

Cost of capital is based on certain assumptions which are closely associated while calculating and measuring the cost of capital. It is to be considered that there are three basic concepts: A. It is not a cost as such. It is merely a hurdle rate. B. It is the minimum rate of return. C. It consists of three important risks such as zero risk level, business risk

and financial risk. Cost of capital can be measured with the help of the following equation. K = rj + b + f. Where, K = Cost of capital. rj = The riskless cost of the particular type of finance, b = The business risk premium. f = The financial risk premium.

8.6 COST OF CAPITAL AND ITS IMPLICATIONS IN BUDGETING DECISIONS

Investment decisions are directly related to financial decisions influenced by cost of capital. Management of a company is always anxious to maximise return on investments with a view to ensure that cost of capital is covered although management may alternatively decide to minimise investment which may yield highest returns for reasons of high risk involved or it may decide to maximise investments for obtaining highest growth through expansion of the productive processes. Management is guided by such considerations as: (1) Opportunities created by technological change requiring replacements, necessitating expansion or taking up new activities. (2) Competition strategies to avail of economic opportunities, investment being planned by them and the threat which may arise to the existing or proposed market shares of the firm; (3) Short-term and long-term market forecasts with reference to sales, revenue proceeds, net profits etc.; (4) Incentives offered by the state to promote investment in particular areas of production required for meeting urgent local needs of the nation or for exporting to earn foreign exchange etc. Nevertheless, the management of a corporate enterprise while preparing capital outlays prepares the particulars of the expected receipts (cash inflows) generated from the activity through such investment. Both are compared over-time and for optimum decision, receipts should cover cost of financing the capital outlays. As such investment or capital budgeting decisions are directly linked with the cost of capital. Before dealing with the application of cost of capital budgeting decisions, it is considered necessary to apprise the readers of the sources of capital and the cost of capital and its significance in investment decisions in the following paragraphs:

Implications in budgeting decisions

Despite the above objections, cost of capital is used as the basis to evaluate investments whose cash flows are perfectly correlated with the cash flows from the company's present assets. With perfect co-relation between the two sets of cash flows risk is the same. But if the timing of the cash flows is not also the same, the same discount rate cannot be used for both investments. But weighted average cost of capital represents an averaging of all risks of the company and can be used to evaluate investments in much the same manner that the pay-back method. It gives some insight and guidance and to that extent it is good to be used. Present value of an investment can be computed using a weighted average cost of capital and this can be compared with present values calculated using the other discount rates. It may be that an investment with a positive present value should be rejected because of its risk characteristics or that an investment with a negative present value using the weighted average cost of capital should be accepted. All this will differ from situation to situation and case to case. Nevertheless, evaluation of capital investment projects requires some basis which could serve as the minimum rate of return which a project should generate. In such cases, weighted cost of capital could serve as an accepted discounting rate for evaluating investment decisions as no project will be acceptable which does not generate funds equal or greater to the cut-off rate represented by weighted cost.

8.7 SUMMARY

Cost of capital is the required return necessary to make a capital budgeting project, such as building a new factory, worthwhile. When analysts and investors discuss the cost of capital, they typically mean the weighted average of a firm's cost of debt and cost of equity blended together. The cost of capital metric is used by companies internally to judge whether a capital project is worth the expenditure of resources, and by investors who use it to determine whether an investment is worth the risk compared to the return. The cost of capital depends on the mode of financing used. It refers to the cost of equity if the business is financed solely through equity, or to the cost of debt if it is financed solely through debt. Many companies use a combination of debt and equity to finance their businesses and, for such companies, the overall cost of capital is derived from the weighted average cost of all capital sources, widely known as the weighted average cost of capital (WACC). The cost of capital is affected by several factors, some beyond the control of the firm and others depending on the investment and financing policies of the firm. Despite the importance of cost of capital in financial management, several misconceptions characterise its application in practice.

8.8 GLOSSARY

- **Cost of capital:** The minimum expected return that providers of capital require to prompt them to invest in or lend to companies, taking into account the risks involved.
- **Cost of debt:** The minimum expected return that providers of debt finance require to prompt them to lend to companies, taking into account the risks involved.
- **Cost of equity:** The minimum expected return that equity investors require to prompt them to invest in companies, taking account the risks involved.
- **Debt:** The financial liability that a company owes at a period in time to providers of debt finance. Debt premium A premium over the risk-free rate paid to the holders of debt.
- **Embedded debt:** Actual debt in a company's balance sheet.
- **Equity:** The difference between the value of a business's assets and its liabilities. It is the stake in the business held by its shareholders. It is often referred to as ordinary share capital and includes the undistributed profits of the company.
- Equity risk premium (ERP), or market risk premium (MRP): A measure of the expected return, on top of the risk-free rate, that an investor would expect when holding the market portfolio. This captures the nondiversifiable risk that is inherent to the market.
- **Finance ability/ financial sustainability:** The ability of an efficient company to secure affordable and competitive financing and service its liabilities. i.e. the ability to secure debt that can be re-financed when appropriate and serviced efficiently.
- **Rate of return:** The annual income and capital growth from an investment, expressed as a percentage of the investment. Real rate The real rate is the rate an investor expects to receive before the impact of inflation.
- **Return on capital:** A financial measure that quantifies how well a company generates returns relative to the capital it has invested in the business.
- **Risk-free rate:** The theoretical rate of return on an investment with zero risk.

- **Small company premium (SCP):** A premium on the cost of capital that may be allowed to enable small companies to maintain access to the capital markets.
- **Specific risk:** Specific risk is risk associated to a particular security, sector or industry. By diversifying (i.e. holding the market portfolio) investors are able to avoid specific risk.
- **Systematic risk:** The risk inherent to the entire market. It is undiversifiable risk and therefore faced by all investors. The beta captures the extent to which the a security is affected by systematic risk
- **Total market return (TMR):** The total return on the market portfolio over a given period of time which includes all returns including interest, dividends, distributions and capital gains.
- **Yield:** The income return on an investment. This refers to the interest or dividends received from a security and are usually expressed annually as a percentage based on the investment's cost, its current market value or its face value.
- **Yield to maturity (YTM):** Yield to maturity is the expected rate of return earned by an investor who buys an investment today at the market price. It discount rate at which the sum of all future cash flows from an investment is equal to the price of the investment.

8.9 SELFASSESSMENT QUESTIONS

1. What is meant by cost of capital?

2. Name any two types of cost of capital.

	3.	Cost of capital is important	for a firm. Explain how	?
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8.10 LESSON END EXERCISE

1. What are implications of cost of capital in capital budgeting decisions?

2. Explain assumptions of cost of capital.

8.11 SUGGESTED READINGS

- I.M. Pandey, Financial Management, Vikas Publisher.
- M.Y.Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

CAPITAL BUDGETING AND COST OF CAPITAL

UNIT-2

Lesson No. 9

SPECIFIC COST OF CAPITAL -COMPUTATIONS OF COST OF EQUITY

STRUCTURE

- 9.1 Introduction
- 9.2 Objectives
- 9.3 Factors affecting cost of capital
- 9.4 Types of cost of capital
- 9.5 Misconceptions surrounding cost of capital
- 9.6 Specific cost of capital- computations of cost of equity
- 9.7 Summary
- 9.8 Glossary
- 9.9 Self Assessment Questions
- 9.10 Lesson end exercise
- 9.11 Suggested Readings

9.1 INTRODUCTION

A firm raises funds from various sources, which are called the components of capital. Different sources of fund or the components of capital have different costs. For example, the cost of raising funds through issuing equity shares is different from that of raising funds through issuing preference shares. The cost of each source is the specific cost of that source, the average of which gives the overall cost for acquir-ing capital. The firm invests the funds in various assets. So it should earn returns that are higher than the cost of raising the funds. In this sense the minimum return a firm earns must be equal to the cost of rais-ing the fund. So the cost of capital may be viewed from two viewpoints—acquisition of funds and appli-cation of funds.

9.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain the types of cost of capital;
- identify the various factors affecting cost of capital;
- understand the misconceptions surrounding cost of capital;
- compute the cost of equity.

9.3 FACTORS AFFECTING COST OF CAPITAL

Cost of capital is the cost for a business but return for an investor. There are various factors that can affect the cost of capital. Broadly, factors can be classified as 'fundamental factors' and 'economic and other factors'. Fundamental factors are market opportunities, capital provider's preference, risk, and inflation. Other factors include Federal Reserve policy, federal surplus and deficit, trade activity, foreign trade surpluses and deficits, country risk and exchange rate risk.

I. Fundamental factors

a) Market opportunity : Unquestionably, most fundamental price deciding factor for anything in this world is the law of demand-supply. Cost of capital is also not away from this fundamental law. When the demand for capital increases, the cost of capital also increases and vice versa. The demand is influenced greatly by the available market opportunities. If there are a lot of production opportunities in the market, more and more entrepreneurs will explore those opportunities to create profitable ventures. Entrepreneurs, then, would require capital to implement their business ideas. So, cost of capital is directly related to the market opportunities available in the market.

- b) Capital provider's preferences: An individual who has some additional funds has two straight choices – save money or consume it. It is completely a personal choice but to a great extent, it is impacted by the culture of a society. For example, Japanese people are more bent towards saving compared to the US. Another important factor that determines the utility of capital is the interest rate or returns available to their funds. Naturally higher returns would enforce higher savings.
- c) **Risk:** 'High-risk high-return' principle works here too. If the venture where investment is required has a high level of risk, the return required by the investor would also be very high to compensate the risk. On the other hand, the businessman taking up the venture may not opt for a too high cost of capital because it may put the viability of the overall project at stake. So, this is how risk plays a key role deciding the capital transactions in the market.
- D) Inflation: All capital providers try to invest in a manner that maximizes returns. The lower benchmark for investing has always been the inflation. At the minimum, an investment should beat the inflation and there should be some real income. Real income is nothing but the actual return less inflation. In simple words, you invested money which could buy you a particular basket of things a year ago. After a year when your investment is matured and you receive money, you would at least expect that money should be able to buy that same basket of things. If the matured money falls short of buying you the same basket, you have diminished the value of your money in last one year. If the money is more than just buying that basket, you have earned real income on your investment.



II. Economic and other factors affecting cost of capital

- a) Federal reserve policy: All federal banks have got the power to influence the economy. US Federal Reserve Board simple purchases the treasury securities, normally held by banks, to boost the economy. Let's understand how it works. When the 'Federal Reserve Board' buys the Treasury securities from the banks, the banks accumulate a lot of loanable funds with it. Now, the banks with a higher supply of funds would start offering loans at lower interest rates. This reduction in interest rates will encourage industrialists to start more and more ventures and that, in turn, will create job opportunities, overall demand in the market etc. Although, there is a flip side of this policy that it will increase the inflation in the longer run. This is how federal policies have a great impact on the cost of capital.
- b) Federal budget deficit or surplus: Federal budget deficit and surplus also have a role to play in deciding the cost of capital in the market. In a surplus situation, Fed would buy Treasury securities from the market and that will reduce the interest rates. On the contrary, in a deficit situation, Fed would sell Treasury securities or mint money. Minting money would increase the money supply in the market along with an expectation of higher inflation and that leads to increasing the cost of money. Similarly, selling Treasury securities to banks will reduce the loanable funds with banks and they increase the cost of funds.
- c) **Trade activity:** Economic boom and recession also play a very important role in determining the cost of capital by impacting the interest rates in the market.
- d) Foreign trade surpluses or deficits: A foreign trade deficit creates a need for borrowing from other countries. Borrower countries will have their own opportunity cost of capital based on the interest rates available with other countries. Higher the borrowings and higher will be the interest rates. That will impact the capital market.
- e) Country risk: Country risk is the risk associated with political, social, economic environment of a country. To understand with an example, assume a country has trends of suddenly changing the tax rates, regulations relating to trade and

commerce etc. An international investor would resist investing in that country because their policy can put any business at stake suddenly. This will reduce the flow of international capital in the country and thereby increase the cost of capital.

f) Exchange rate risk: Investment in countries other than the home country has a bearing of exchange rate risk on them. The real return of an investor depends on two factors i) The performance of the investment in the foreign country and ii) The performance of the currency of that country in comparison to home currency. At the time of maturity of the investment, if the home currency weakens, the net realization in home currency would also be reduced. That can affect an investor's decision of investing in other countries, especially whose currency rates fluctuate a lot.

III. Individual company factors affecting cost of capital

- a) **Capital structure policy:** All companies try to optimize their capital structure with a policy that suits their individual situations. New acquisition of capital will depend a lot on the capital structure policy and therefore the capital structure policy of the said company will have a bearing on its cost of capital.
- b) Dividend policy: A dividend policy of a corporation decides how much percentage of profits it will retain and how much will be distributed as dividends. If a company retains higher percentage of profits in the business, it is effectively adding a capital at the cost of equity. Accordingly, the overall cost of capital will be impacted.
- c) Investment policy: A company is nothing but a set of different projects it takes up. It is very important to note that different projects would have different risk profile. If a company is adding a project with higher risk compared to overall risk level of the organization, it is effectively increasing the risk of the organization. With this increase in risk, the required rate of return will also increase. This is how, investment policy impacts the cost of capital.

9.4 TYPES OF COST OF CAPITAL

Cost of capital is defined in several ways: The minimum required rate of return that a project must earn, the cost of using fund in the firm, the cut-off rates for a capital expenditure or the target rate of return on investment. Various types of cost of capital are described below:

i. Explicit cost of capital:

Explicit cost of any source may be defined as the discount rate that equates the present value of the funds received by a firm with the present value of expected cash outflows. It can be computed by using the following equation:

$$C_{f} = \frac{F_{1}}{(1+K)} + \frac{F_{2}}{(1+K)^{2}} + \frac{F_{3}}{(1+K)^{3}} + \dots + \frac{F_{n}}{(1+K)^{n}}$$

where,
$$C_{f} = \text{Net amount of funds received by the firm,}$$

$$F_{1}, F_{2}, F_{3}, \dots, F_{n} = \text{Cash outflows at different years, i.e. the payment made to the suppliers of fund, and
$$K = \text{Explicit cost of capital.}$$

Thus explicit cost of capital is the internal rate of return the firm pays for financing.$$

ii. Implicit cost of capital:

The implicit cost may be defined as the rate of return associated with the best investment opportunity for the firm and its shareholders that will be foregone if the project under consideration by the firm is accepted. If a firm retains its earnings, implicit cost will be the income, the shareholders could have earned if such earnings would have been distributed and invested by them elsewhere.

iii. Specific cost of capital:

The cost of each component of capital is known as specific cost of capital. A firm raises capital from different sources such as equity, preference, debentures, etc. Specific cost of capital is the cost of equity share capital, cost of preference share capital, cost of debentures, etc., individually.

iv. Weighted average cost of capital:

The weighted average cost of capital is the combined cost of each component of funds employed by the firm. The weights are the proportion of the value of each component of capital in the total capital.

v. Marginal cost of capital:

Marginal cost is defined as the cost of raising one extra rupee of capital. It is also called the incremental or differential cost of capital. It refers to the change in overall cost of capital resulting from the raising of one more rupee of fund. In other words, it is described as the relevant cost of new funds required to be raised by the company.

9.5 MISCONCEPTIONS SURROUNING COST OF CAPITAL

The cost of capital is a central concept in financial management linking the investment and financing decisions. Hence, it should be calculated correctly and used properly in investment evaluation. Despite this injunction, we find that several errors characterise the application of this concept. The more common misconceptions, along with suggestions to overcome them, are discussed below.

1. The concept of cost of capital is too academic or impractical - Some companies do not calculate the cost of capital because they regard it as 'academic' or 'impractical' or 'irrelevant' or 'imprecise.' These misgiving about cost of capital appear to be unjustified. Such reservation can be dispelled by emphasising the following points:

- The cost of capital is an essential ingredient of discounted cash flow analysis. Since discounted cash flow analysis is now widely used, cost of capital can scarcely be considered 'academic' or 'impractical'.
- Out of the various inputs required for discounted cash flow analysis, viz., project life, project cash flows (consisting of initial investment, operating cash flows, and terminal cash flow) and cost of capital, the last one, viz., the cost of capital can be calculated most reliably and accurately. So a concern about its imprecision seems to be misplaced.

2. Current liabilities (accounts payable and provisions) are considered as capital components - Sometimes it is argued that accounts payable and accruals are sources of

funding to be considered in the calculation of the WACC. This view is not correct because what is not provided by investors is not capital. Current liabilities arise on account of an operating relationship of the firm with its suppliers and employees. They are deducted when the investment requirement of the project is determined. Hence, they should not be considered in calculating the WACC. Of course, current liabilities are not ignored in capital budgeting because they appear in the cash flows of the project. Put differently, current liabilities affect a project's cash flows, but not its WACC.

3. The coupon rate on the firm's existing debt is used as the pre-tax cost of debt - The coupon rate on the firm's existing debt reflects a historical cost. What really matters in investment decision making is the interest rate the firm would pay if it issues debt today. Hence use the current cost of debt, not the historical cost of debt.

4. When estimating the market risk premium in the CAPM method, the historical average rate of return is used along with the current risk -free rate. Consider the following information:

- Historical average return on common stocks = 19 percent
- Historical return on long-term Treasury bonds = 10 percent
- Current expected return on common stocks = 14 percent
- Current return on long-term Treasury bonds = 7 percent

Sometimes the market risk premium is calculated as the difference between the historical average return on common stocks and the current return on long-term Treasury bonds. This is not correct.

To calculate the market risk premium, you can use the historical risk premium (19 percent - 10 percent) or the current risk premium (14 percent - 7 percent), but not the difference between the historical average return on common stocks and the current return on long-term Treasury bonds (19 percent - 7 percent).

5. The cost of equity is equal to the dividend rate or return on equity - It appears that the cost of equity is sometimes measured incorrectly. It is measured as the current dividend rate (dividend per share as a percentage of face value per share) or as return on equity. Only by accident do these measures represent the cost of equity correctly.

It should be clearly understood that the cost of equity is the rate of return required by equity investors given the risk they are exposed to. It has nothing to do with the current dividend rate or return on equity, which are mere historical numbers.

6. Retained earnings are either cost free or cost significantly less than external equity - Sometimes firms impute a negligible or low cost to retained earnings under the influence of wrong notions like "retained earnings have no cost because shareholders are satisfied with dividends" or "retained earnings are already with the firm and hence some nominal returns on them may suffice."

The error in such reasoning stems from ignoring the opportunity cost associated with retained earnings. When a firm retains a portion of its earnings, equity shareholders are denied dividends to that extent. If the same were distributed as dividends, equity shareholders could invest it elsewhere to earn a rate of return comparable to the cost of equity. Hence the opportunity cost of retained earnings is more or less equal to the cost of equity funds.

7. **Depreciation has no cost -** Similar to the misconception that retained earnings are more or less cost-free is the notion that depreciation-generated funds are also virtually cost free. In a conversation with the author, a manager commented: "Depreciation is capital already in the company. Since it does not have to be raised, even in an indirect sense of retained earnings, it clearly has no cost."

To guard against such an error, invoke the opportunity cost principle once again. Theoretically, the firm can return the depreciation-generated funds to its shareholders and lenders (the parties who provided the finance for asset acquisition) and they, in turn, can invest these funds elsewhere. Hence, the opportunity cost of depreciation - generated funds is the average return the shareholders and lenders would earn on these funds by investing them elsewhere. And this would be equal to the average cost of capital of the firm.

8. Book value weights may be used to calculate the WACC - Often firms use book value weights in the existing capital structure to calculate the WACC. This is not correct. Weights should be based on market values, not book values. Ideally, the target capital structure (in market value terms) should determine the weights for the WACC. If the target capital structure is not specified, use the current market value weights. 9. The cost of capital for a project is calculated on the basis of the specific sources of finance used for it - If a firm raises debt when it is investing in some project, it may regard the post-tax cost of debt as the relevant cost of capital. Likewise, if it happens to raise equity when it is investing in some other project, it may consider the cost of equity as the relevant cost of capital. In both these cases, the error stems from calculating the WACC on the basis of the immediate sources of finance tapped The immediate source of funds used for a project does not necessarily determine the hurdle rate. What matters is the contribution made by the project to overall debt capacity of the firm and not which sources of funds happen to be tapped when the project is being undertaken.

10. The project cost of capital is the same as firm's WACC - Many firms apply a uniform WACC to all projects, irrespective of differences in their risk characteristics. This practice is based on the following reasoning: "While a project may not have the same risk as the firm, its relevant cost of capital is still the firm's WACC because the investors are paid from the cash flows of the firm, not the cash flows of the project."

The above reasoning is flawed. The return that the investors require from a project is the same as what they would get from an alternative investment with the same risk profile and it has nothing to do with the return that they are currently getting from the firm. For example, if a firm currently engaged in petrochemical business sets up a retailing business, investors will require a return from the retailing business that reflects its riskiness. **Note that it is not the WACC of a firm that determines the cost of capital of a project. Rather, it is the other way.** Each project has its own cost of capital which reflects its riskiness and its debt capacity. The cost of capital of the firm is the weighted average of the cost of capital of various projects undertaken by the firm.

9.6 SPECIFIC COST OF CAPITAL- COMPUTATION OF COST OF EQUITY

Costs of various sources of finance are computed measured and compared while making investment decisions. Capital is raised through that source which is most economical and cheapest. Of course, the main question is how to measure cost of various sources of capital. While computing cost of capital, various factors such as requirement of the company, the circumstances under which the company raises capital the constraints of company policy etc. The measurement of cost of equity is discussed as under:

Cost of equity or ordinary shares:

The funds required for the project are raised from the equity shareholders who are of permanent nature. These funds need not be repayable during the life time of the organization. Hence it is a permanent source of funds. The equity shareholders are the owners of the company. The main objective of the firm is to maximize the wealth of the equity shareholders. Equity share capital is the risk capital of the company. If the company's business is doing well the ultimate beneficiaries are the equity shareholders who will get the return in the form of dividends from the company and the capital appreciation for their investment. If the company comes for liquidation due to losses, the ultimate and worst suffers after the equity shareholders. Sometimes they may not get their investment back during the liquidation process. Profits after taxation, less dividends paid out to the shareholders, are funds that belong to the equity shareholders which have been reinvested in the company and therefore, those retained funds should be included in the category of equity, the cost of retained earnings is discussed separately from cost of equity capital the cost of equity may be defined as the minimum rate of return that a company must earn on the equity financed portion of an investment project so that market price of the shares remain unchanged. The following methods are used in calculation of equity.

a) Dividend yield method: The dividend per share is expected on the current market price per share. As per this method, the cost of capital defined as "the discount rate that equates the present value all expected future dividends per share with the net proceeds of the sale (or the current market price) of the share." This method is based on the assumption that the market value of shares is directly related to the future dividends on the shares. Another assumption is that the future dividend per share is expected to be constant and the company is expected to earn at least this yield to keep the shareholders content.

Ke = D/P

Where Ke = Cost of Equity

D = Dividend per share

P = Current market price per share.

This method emphasizes on future dividend expected to be constant. It does not allow for any growth rate. But in reality, a shareholder expects the returns from his equity investment to grow over time. This approach has no relevance to the company.

b) Dividend growth model: Shareholders will normally expect dividend to increase year after year and not to remain constant in perpetuity. In this method, an allowance for future growth in dividend is added to the current dividend yield. If is recognized that the current market price of a share reflects expected future dividends. The dividend growth model is also called as 'Gordon dividend growth model'. Thus, f dividends are expected to grow at a constant rate of 'g' then cost of equity share capital (K_e) will be

 $K_{e} = D/P + g.$

This method is suitable for those entities where growth rate in dividend is relatively stable. But this method ignores the capital appreciation in the value of shares. A company which declares a higher amount of dividend out of given quantum of earnings will be placed at a premium as compared to a company which earns the same amount of profits but utilizes a major part of it in financing its expansion programme.

Example 9.1:

XY Company's share is currently quoted in market at Rs. 60. It pays a dividend of Rs. 3 per share and investors expect a growth rate of 10% per year.

You are required to calculate:

- (i) The company's cost of equity capital.
- (ii) The indicated market price per share, if anticipated growth rate is 12%.
(iii) The market price, if the company's cost of equity capital is 12%, anticipated growth rate is 10% p.a., and dividend of Rs. 3 per share is to be maintained.

Solution :

	We know, cost of Equity Capital (K_e) = $\frac{D}{P}$ + g.						
-	(i)	$K_e = \frac{Rs. 3}{Rs. 60} + 0.10$	= (0.05 + 0.10 = 0.15 or 15%			
•	(ii)	Market Price (P)	=	Dividend (D) Cost of equity capital (K _e) - Growth rate (g)			
			=	$\frac{\text{Rs. 3}}{15\% - 12\%} = \frac{\text{Rs. 3}}{3\%} = \text{Rs. 100.}$			
	(iii)	Market Price (P)	=	$\frac{\text{Rs. 3}}{12\% - 10\%} = \frac{\text{Rs. 3}}{2\%} = \text{Rs. 150.}$			

Example 9.2:

The current market price of a share is Rs. 100. The firm needs Rs. 1,00,000 for expansion and the new shares can be sold at only Rs. 95. The expected dividend at the end of the current year is Rs. 4.75 per share with a growth rate of 6%.

Calculate the cost of capital of new equity.

Solution:

We know, cost of Equity Capital $(K_{a}) = D/P + g$

(i) When current market price of share (P) = Rs. 100

K = Rs 4.75 / Rs. 100 + 6% = 0.0475 + 0.06 = 0.1075 or 9.75%.

(ii) Cost of new Equity Capital = Rs. 4.75 / Rs. 95 + 6% = 0.11 or, 11%.

Example 9.3:

A company's share is currently quoted in the market at Rs. 20. The company pays a dividend of Rs. 2 per share and the investors expect a growth rate of 5% per year.

You are required to calculate (a) Cost of equity capital of the company, and (b) the market price per share, if the anticipated growth rate of dividend is 7%.

Solution:

- (a) Cost of equity share capital (K) = D/P + g = Rs. 2/Rs. 20 + 5% = 15%
- (b) $K_e = D/P + g$ or, 0.15 = Rs. 2 / P + 0.07 or, P = 2/0.08 = Rs. 25.

Example 9.4:

Green Diesel Ltd. has its equity shares of Rs. 10 each quoted in a stock exchange at a market price of Rs. 28. A constant expected annual growth rate of 6% and a dividend of Rs. 1.80 per share has been paid for the current year.

Calculate the cost of equity share capital.

Solution:

 $D_0 (1 + g)/P_0 + g = 1.80 (1 + .06)/28 + 0.06$ = 0.0681 + 0.06 = 12.81%

c) Earnings/price ratio method:

This method takes into consideration the Earnings per share (EPS) and the market price of the share. It is based on the assumption that the investors capitalize the stream of future earnings of the share and the earnings of a share need not be in the form of dividend and also it need not be disbursed to the shareholders. It based on the argument that even if the earnings are not disbursed as dividends, it is kept in the retained earnings and it causes future growth in the earnings of the company as well as the increase in market price of the share. In calculation of cost of equity share capital, the earnings per share is divided by the current market price. Thus, the cost of equity capital (K_{e}) is measured by:

 $K_{e} = E/P$

where E = Current earnings per share

P = Market price per share.

If the future earnings per share will grow at a constant rate 'g' then cost of equity share capital (K_a) will be

 $K_e = E/P + g.$

This method is similar to dividend/price method. But it ignores the factor of capital appreciation or depreciation in the market value of shares. Adjustment of Floatation Cost There are costs of floating shares in market and include brokerage, underwriting commis-sion etc. paid to brokers, underwriters etc.

These costs are to be adjusted with the current market price of the share at the time of computing cost of equity share capital since the full market value per share cannot be realised. So the market price per share will be adjusted by (1 - f) where 'f' stands for the rate of floatation cost.

Thus, using the Earnings growth model the cost of equity share capital will be:

 $K_{e} = E / P (1 - f) + g$

Example 9.5:

The share capital of a company is represented by 10,000 Equity Shares of Rs. 10 each, fully paid. The current market price of the share is Rs. 40. Earnings available to the equity shareholders amount to Rs. 60,000 at the end of a period.

Calculate the cost of equity share capital using Earning/Price ratio.

Solution :

We know, Cost of Equity Capital =
$$\frac{E}{P}$$

E = Earnings per share = $\frac{Rs. 60,000}{10,000}$ = Rs. 6.
P = Current market price = Rs. 40.
Cost of Equity Capital (K_e) = $\frac{Rs. 6}{Rs. 40}$ = 0.15% or 15%.

Example 9.6:

A company plans to issue 10,000 new Equity Shares of Rs. 10 each to raise additional capital. The cost of floatation is expected to be 5%. Its current market price per share is Rs. 40.

If the earnings per share is Rs. 7.25, find out the cost of new equity.

Solution :

Let
$$K_e$$
 be the cost of New Equity.
 $K_e = \frac{E}{P(1-f)}$ where $E = Rs. 7.25$
 $= \frac{7.25}{40(1-0.05)}$ $P = Rs. 40$
 $= \frac{7.25}{38} = 0.1907$ or 19.07% $f = 5\% = .05$.

9.7 SUMMARY

Cost of capital is the required return necessary to make a capital budgeting project, such as building a new factory, worthwhile. When analysts and investors discuss the cost of capital, they typically mean the weighted average of a firm's cost of debt and cost of equity blended together. The cost of capital metric is used by companies internally to judge whether a capital project is worth the expenditure of resources, and by investors who use it to determine whether an investment is worth the risk compared to the return. The cost of capital depends on the mode of financing used. It refers to the cost of equity if the business is financed solely through equity, or to the cost of debt if it is financed solely through debt. Many companies use a combination of debt and equity to finance their businesses and, for such companies, the overall cost of capital is derived from the weighted average cost of all capital sources, widely known as the weighted average cost of capital (WACC). The cost of capital is affected by several factors, some beyond the control of the firm and others depending on the investment and financing policies of the firm. Despite the importance of cost of capital in financial management, several misconceptions characterise its application in practice.

9.8 GLOSSARY

- **Cost of capital:** The minimum expected return that providers of capital require to prompt them to invest in or lend to companies, taking into account the risks involved.
- **Cost of debt:** The minimum expected return that providers of debt finance require to prompt them to lend to companies, taking into account the risks involved.
- **Cost of equity:** The minimum expected return that equity investors require to prompt them to invest in companies, taking account the risks involved.
- **Debt:** The financial liability that a company owes at a period in time to providers of debt finance. Debt premium A premium over the risk-free rate paid to the holders of debt.
- **Embedded debt:** Actual debt in a company's balance sheet.
- **Equity:** The difference between the value of a business's assets and its liabilities. It is the stake in the business held by its shareholders. It is often referred to as ordinary share capital and includes the undistributed profits of the company.
- Equity risk premium (ERP), or market risk premium (MRP): A measure of the expected return, on top of the risk-free rate, that an investor would expect when holding the market portfolio. This captures the nondiversifiable risk that is inherent to the market.
- **Finance ability/ financial sustainability:** The ability of an efficient company to secure affordable and competitive financing and service its liabilities. i.e. the ability to secure debt that can be re-financed when appropriate and serviced efficiently.
- **Rate of return:** The annual income and capital growth from an investment, expressed as a percentage of the investment. Real rate The real rate is the rate an investor expects to receive before the impact of inflation.
- **Return on capital:** A financial measure that quantifies how well a company generates returns relative to the capital it has invested in the business.

- **Risk-free rate:** The theoretical rate of return on an investment with zero risk.
- **Small company premium (SCP):** A premium on the cost of capital that may be allowed to enable small companies to maintain access to the capital markets.
- **Specific risk:** Specific risk is risk associated to a particular security, sector or industry. By diversifying (i.e. holding the market portfolio) investors are able to avoid specific risk.
- **Systematic risk:** The risk inherent to the entire market. It is undiversifiable risk and therefore faced by all investors. The beta captures the extent to which the a security is affected by systematic risk
- **Total market return (TMR):** The total return on the market portfolio over a given period of time which includes all returns including interest, dividends, distributions and capital gains.
- **Yield:** The income return on an investment. This refers to the interest or dividends received from a security and are usually expressed annually as a percentage based on the investment's cost, its current market value or its face value.
- **Yield to maturity (YTM):** Yield to maturity is the expected rate of return earned by an investor who buys an investment today at the market price. It discount rate at which the sum of all future cash flows from an investment is equal to the price of the investment.

9.9 SELFASSESSMENT QUESTIONS

1. What is meant by specific cost of capital?

Mention the economic factors affecting cost of capital
Cost of capital is important for a firm in taking capital budgeting decisions. how?
LESSON END EXERCISE
what are the common misconceptions surrounding cost of capital in practic

2. Explain YTM.

9.11 SUGGESTED READINGS

- I.M.Pandey, Financial Management, Vikas Publisher.
- M.Y.Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

CAPITAL BUDGETING AND COST OF CAPITAL

UNIT-II

Lesson No. 10

SPECIFIC COST OF CAPITAL-COMPUTATIONS OF PREFERENCE, DEBT AND RETAINED EARNINGS; COMPOSITE COST OF CAPITAL

STRUCTURE

- 10.1 Introduction
- 10.2 Objectives
- 10.3 Computations of specific cost of capital- preference, debt, retained earnings and composite cost of capital
- 10.4 Capital asset pricing model (CAPM)
- 10.5 Classification of cost of capital and its measurement
- 10.6 Difference between cost of capital and cost of equity
- 10.7 Summary
- 10.8 Glossary
- 10.9 Self assessment questions
- 10.10 Lesson end exercise
- 10.11 Suggested readings

10.1 INTRODUCTION

The cost of capital is a very important factor to be considered in deciding the firm's capital structure. It is one of the bases of the theories of financial management. Of course, cost of capital is to a certain extent debatable aspect of financial management.

Yet it is a fact that before determining the capital structure a company is required to compute the cost of capital of various sources of finance and compare them. On that basis the company decides which source of finance is the best and in the interest of the owners and even of creditors.

From the viewpoint of investors, cost of capital is the reward of postponement of his present needs, so as to get a fair return on his investment in future. But from the viewpoint of the company, the cost of capital refers to the financial burden that a company has to bear in financing its business through various sources. Cost of capital is measured for different sources of capital structure of a firm. It includes cost of debenture, cost of loan capital, cost of equity share capital, cost of preference share capital, cost of retained earnings etc.

10.2 OBJECTIVES

After studying this lesson, you will be able to:

- measure specific costs of capital
- differentiate between cost of capital and cost of equity
- explain CAPM

10.3 COMPUTATIONS OF SPECIFIC COSTS OF CAPITAL-PREFERENCE, DEBT, RETAINED EARNINGS AND COMPOSITE COST OF CAPITAL

A company can raise funds from various sources such as debentures, public deposits, long term loans, preference shares, equity shares and retained earnings. It is very difficult to assess the cost of capital respect each of the sources of funds, because it requires us to make certain assumptions. Yet it is essential to determine the specific cost of each source of funds to arrive at the aggregate cost of capital. The measurement of specific costs of capital of different sources of capital structure is discussed as under:

A. Cost of debt :

The capital structure of a firm normally includes the debt capital. Debt may be in the form of debentures bonds, term loans from financial institutions and banks etc. The amount of interest payable for issuing debenture is considered to be the cost of debenture or debt

capital (K_d). Cost of debt capital is much cheaper than the cost of capital raised from other sources, because interest paid on debt capital is tax deductible.

The cost of debenture is calculated in the following ways:

(i) When the debentures are issued and redeemable at par:

 $\mathbf{K}_{\mathrm{d}} = \mathbf{r} \left(1 - \mathbf{t} \right)$

where $K_d = Cost$ of debenture

r = Fixed interest rate

t = Tax rate

(ii) When the debentures are issued at a premium or discount but redeemable at par

The debentures may be issued to a premium or at a discount. If they are issued at a discount the company receives a smaller amount that the face value of the debenture and hence the cost of debt goes up. If they are issued at a premium the company receives a larger amount than the face value of its debentures and hence cost of debt goes down. The specific cost of debt after tax for each year can be calculated with the help of following formula:

 $\mathbf{K}_{\mathrm{d}} = \mathrm{I/NP} \left(1 - \mathrm{t}\right)$

where, $K_d = Cost$ of debenture

I = Annual interest payment

t = Tax rate

Np = Net proceeds from the issue of debenture.

(iii) When the debentures are redeemable at a premium or discount and are redeemable after 'n' period:

K_d

 $I(1-t)+1/N(R_v - NP) / \frac{1}{2}(R_v - NP)$

where $K_d = Cost$ of debenture.

I = Annual interest payment

t = Tax rate

NP = Net proceeds from the issue of debentures

Ry = Redeemable value of debenture at the time of maturity

Example 10.1:

- (a) A company issues Rs. 1,00,000, 15% Debentures of Rs. 100 each. The company is in 40% tax bracket. You are required to compute the cost of debt after tax, if debentures are issued at (i) Par, (ii) 10% discount, and (iii) 10% premium.
- (b) If brokerage is paid at 5%, what will be the cost of debentures if issue is at par?
 - (a) We know, Cost of Debenture $K_d = \frac{I}{NP}(1-t)$
 - (i) Issued at par : $K_d = \frac{Rs. 15,000}{Rs. 1,00,000}(1 0.4) = 0.09 \text{ or } 9\%$.
 - (ii) Issued at discount of 10%

$$K_d = \frac{Rs. 15,000}{Rs. 90,000}(1 - 0.4) = 0.10 \text{ or } 10\%$$

(iii) Issued at 10% premium

$$K_d = \frac{\text{Rs. 15,000}}{\text{Rs. 1,10,000}} (1 - 0.4) = 0.0818 \text{ or } 8.18\%.$$

(b) If brokerage is paid @ 5% and debentures are issued at par

$$K_d = \frac{Rs. 15,000}{Rs. 95,000 (i.e., Rs. 1,00,000 - Rs. 5,000)} (1 - 0.4) = 0.0947 \text{ or } 9.47\%.$$

Example 10.2

ZED Ltd. has issued 12% Debentures of face value of Rs. 100 for Rs. 60 lakh. The floating charge of the issue is 5% on face value. The interest is payable annually and the debentures are redeemable at a premium of 10% after 10 years.

What will be the cost of debentures if the tax is 50%?

Solution :

We know, Cost of Debenture $K_d = \frac{I(1-t) + \frac{1}{n}(R-P)}{\frac{1}{2}(R+P)}$

Here, I = Rs. 12, t = 50% or 0.50, P = Rs. 100 - 5 = Rs. 95, n = 10 years. R = Rs. 100 + 10% of Rs. 100 = Rs. 110.

$$K_{d} = \frac{\frac{12(1-0.5) + \frac{1}{10}(110-95)}{\frac{1}{2}(110+95)}}{\frac{1}{2}(110+95)} = \frac{6+1.5}{102.5} = 0.073 = 7.3\%.$$

B. Cost of preference share capital:

As compared to debenture, it is a bit difficult to calculate the cost of preference capital, as the amount of interest on debentures is fixed, while it is not compulsory to pay dividend on preferences shares, in spite of the fact that the rate of dividend is fixed. Secondly, it is argued that preference dividend is not a charge on earnings; rather it is a distribution of profit. Hence, there is no cost of preference capital. This, however, is not true. There is certain reason why dividend on preference capital is generally paid, even though it is not legally binding on the company to do so:

- (1) If the company does not pay preference dividend, it cannot pay dividend on equity shares also, because it is obligatory for the company to pay preference dividend before equity dividend is paid.
- (2) If the company does not pay dividend on equity shares, its credit standing is damaged. And it would find it difficult to raise funds in future.
- (3) The market value of its shares is adversely affected, in case of its failure to pay dividend.

These are the reasons why a company generally pays the preference dividend when it has made sufficient profit, even though it is not legally compulsory to do so. Thus the preference capital does entail the cost which is calculated on the basis of the rate preference dividend. The question of adjusting tax does not arise in case of preference capital, because dividend on preference shares is paid out of profit after taxes and the dividends is not tax deductible. Hence, taxes are not taken into account on preference shares, as it is done in case of debentures. We shall divide preference shares into two parts for the purpose of computing cost of preference capital viz. Irredeemable preference shares and redeemable preference shares. For preference shares, the dividend rate can be considered as its cost, since it is this amount which the company wants to pay against the preference shares. Like debentures, the issue expenses or the discount/premium on issue/redemption are also to be taken into account.

(i) Irredeemable preference shares

The principal amount of preference shares is not being returned during the lifetime of the company. Hence, the burden on the company is that of only annual dividend. Thus the computation of the cost of preference capital is comparatively easy. The formula used is as follows:

 $(\mathbf{K}_{\mathbf{p}}) = \mathbf{D}_{\mathbf{p}} / \mathbf{NP}$

Where, Kp = Cost of preference Capital

 D_{p} = Preference dividend per share

NP = Net proceeds from the issue of preference shares.

(ii) **Redeemable preference shares**

When preference shares are redeemable, i.e. when the principal amount is to be returned after the period, it entails two types of burden: principal amount and dividend. The formula used for computing the cost of preference capital is the same as that used debentures, except that it is not to be adjusted for tax as the preference dividend is not tax deductible.

Hence the formula will be as follows.

$$K_{\mathbf{p}} = \frac{D_{\mathbf{p}} + \frac{1}{n}(R_{\mathbf{V}} - N\mathbf{P})}{\frac{1}{2}(R_{\mathbf{V}} + N\mathbf{P})}$$

where, Kp = Cost of preference Capital

NP = Net proceeds from the issue of preference shares

 $R_v =$ Net amount required for redemption of preference shares

 D_{p} = Annual dividend amount.

There is no tax advantage for cost of preference shares, as its dividend is not allowed deduction from income for income tax purposes. The students should note that both in the case of debt and preference shares, the cost of capital is computed with reference to the obligations incurred and proceeds received. The net proceeds received must be taken into account while computing cost of capital.

Example 10.3

A company issues 10% Preference shares of the face value of Rs. 100 each. Floatation costs are estimated at 5% of the expected sale price.

What will be the cost of preference share capital (K_p) , if preference shares are issued (i) at par, (ii) at 10% premium and (iii) at 5% discount? Ignore dividend tax.

Solution:

We know, cost of preference share capital $(K_p) = D_p/P$

Example 10.4 :

Ruby Ltd. issues 12%. Preference Shares of Rs. 100 each at par redeemable after 10 years at 10% premium.

What will be the cost of preference share capital?

Solution :

We know, cost of preference share
$$(K_p) = \frac{D_P + \frac{1}{n}(R - P)}{\frac{1}{2} \times (R + P)}$$

Here, $D_p = 12\%$ of Rs. 100 = Rs. 12, R = Rs. 110 (at 10% premium) P = Rs. 100 (at par), n = 10 years.

$$K_{\rm p} = \frac{\text{Rs.}12 + \frac{1}{10}(\text{Rs.}110 - \text{Rs.}100)}{\frac{1}{2} \times \text{Rs.}(110 + 100)} = \frac{\text{Rs.}12 + \text{Re.}1}{\text{Rs.}105} = \frac{\text{Rs.}13}{\text{Rs.}105} = 0.1238 = 12.38\%$$

Example 10.5

A company issues 12% redeemable preference shares of Rs. 100 each at 5% premium redeemable after 15 years at 10% premium. If the floatation cost of each share is Rs. 2, what is the value of K_p (Cost of preference share) to the company?

Solution :

$$K_{\rm p} = \frac{D_{\rm p} + \frac{1}{n}(R_{\rm V} - NP)}{\frac{1}{2}(R_{\rm V} + NP)}$$

Here, $D_{\rm p} = 12\%$ of Rs. 100 = Rs. 12, $R_{\rm V} = Rs.$ 110 (at a 10% premium)
 $N_{\rm p} = Rs.$ 100 + 5% of Rs. 100 - Rs. 2 = Rs. 103, n = 15 years
 $K_{\rm p} = \frac{Rs.$ 12 + $\frac{1}{15}(110 - 103)}{\frac{1}{2}(110 + 103)} = \frac{Rs.$ (12 + 0.467)}{Rs. 106.50 = 11.706%.

C. Cost of retained earnings:

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

But in practice, retained earnings are a slightly cheaper source of capital as compared to the cost of equity capital.

Therefore the cost of retained earnings is treated separately from the cost of equity capital. The cost of retained earnings to the shareholders is basically an opportunity cost of such funds to them. It is equal to the income that they would otherwise obtain by placing these funds in alternative investment. The cost of retained earnings is determined based on the opportunity rate of earnings of equity shareholders which is being forgone continuously. In such a case, the cost of retained earnings (K_r) would be adjusted by the personal tax rate and applicable brokerage, commission etc. if any.

Therefore,
$$K_r = K_e (1 - t) (1 - f)$$
, where $K_e = \frac{D}{P} + g$
 $t =$ Shareholders personal tax rate.
 $f =$ rate of floatation cost.

Many accountants consider the cost of retained earnings as the same as that of the cost of equity share capital. However, if the cost of equity share capital i9 computed on the basis of dividend growth model (i.e., D/P + g), a separate cost of retained earnings need not be computed since the cost of retained earnings is automatically included in the cost of equity share capital.

Therefore, $K_r = K_e = D/P + g_e$.

Example 10.6 :

It is given that the cost of equity of a company is 20%, marginal tax rate of the shareholders is 30% and the Broker's Commission is 2% of the investment in share. The company proposes to utilise its retained earnings to the extent of Rs. 6,00,000.

Find out the cost of retained earnings.

Solution :

We know that cost of retained earnings		-
$K_r = K_e(1 - t)(1 - f)$	Here K _e	= 20% = 0.20
or $K_r \approx 0.20(1 - 0.30)(1 - 0.02)$	t	= 30% = 0.30
= 0.1372 or, 13.72%.	f	= 2% = 0.02.

D. Composite or overall or weighted average cost of capital:

A firm may procure long-term funds from various sources like equity share capital, preference share capital, debentures, term loans, retained earnings etc. at different costs depending on the risk perceived by the investors. When all these costs of different forms of long-term funds are weighted by their relative proportions to get overall cost of capital it is termed as weighted average cost of capital. It is also known as composite cost of capital is considered.

The weighted average cost of capital is used by an enterprise because of the following reasons:

- (i) It is useful in taking capital budgeting/investment decisions.
- (ii) It recognises the various sources of finance from which the investment proposal derives its life-blood (i.e., finance).
- (iii) It indicates an optimum combination of various sources of finance for the enhance-ment of the market value of the firm.
- (iv) It provides a basis for comparison among projects as a standard or cut-off rate.

It may be recalled that the term 'cost of capital' has been used to denote the overall composite cost of capital or weighted average of the cost of each specific type of fund, i.e., weighted average cost. In other words, when specific costs are combined in order to find out the overall cost of capital, it may be defined as the composite or weighted average cost of capital. Thus, the weighted average is used on the ground that the proportions of various sources of funds are different in the total capital structure of a firm. That is why overall cost of capital recognises the relative proportions of different sources and, as such, the weighted average and not the simple average.

Overall cost of capital is used for the following justifications:

- (i) The firm can increase the market price per share after accepting projects which yield more than the average-cost.
- (ii) It recognises the fact that it is better to use different sources of finance instead of a single one.
- (iii) It also provides a basis for comparison among projects as a standard or a cut-off rate. One point in this respect is to be noted, that is, if specific costs are taken as the cost of financing, proper comparison is not possible. In that case, specific costs will reveal shifting standard at certain intervals. This particular attention has been depicted in the graph (Fig. 9.2) which expresses the relationship between the specific cost and the average cost of capital.

Computation of overall cost of capital:

The computation of overall cost of capital involves the following steps:

- **Step 1:** Computing specific cost of capital for each source of capital like cost of equity, cost of debt, cost of retained earnings and cost of preference shares.
- **Step 2:** Assigning proper weights to specific costs; the weight may be the book value or market value.
- **Step 3:** Multiplying the cost of each source by appropriate weights to derive total weighted cost.
- **Step 4:** Dividing the total weighted cost by total weight. We know two types of weights can be used for computing the overall cost of capital: Book value and market value.

These are discussed below:

i. Book Value:

Under this method, the book value of different sources of finance is used as weight for computing overall/weighted average cost of capital. Here it has been assumed that new finances are raised in same proportion as the firm currently has in its capital structure. Book value weight is the proportion of book value of various sources of capital in the capital structure. So for example, the weight for equity will be E_B/B , where E_B is the book value of equity and B is the total book value of all the sources of capital. Hence overall cost of capital or weighted average cost of capital (WACC) using book value weight may be calculated as:

$$WACC = K_o = K_e \frac{E_M}{M} + K_r \frac{R_M}{M} + K_P \frac{P_M}{M} + K_d \frac{D_M}{M}$$

Where, $K_0 = Overall cost of capital,$

 $K_e = Cost of equity.$

 $E_{_{\rm B}}$ = Book value of equity capital.

B = Total book value of all the sources of capital,

 $K_r = Cost of retained earnings,$

 $R_{_{\rm B}}$ = Book value of retained earnings,

 $K_n = Cost of preference shares,$

 $P_{\rm B}$ = Book value of preference shares,

 $K_d = Cost of debt$, and

 $D_{\rm B}$ = Book value of Debt.

ii. Market Value:

This method uses the current market price of different sources of capital as weight for computing overall/weighted average cost of capital. It is a more realistic and reasonable method for computing overall cost of capital because the market value of various sources of capital closely approximates the actual amount to be received from issuing such securities and the costs of spe-cific sources of capital are calculated using market values. Market value weight is the proportion of market value of various sources of capital in the capital structure. So for example, the weight for equity will be E_M/M where E_M is the market value of equity and M is the total market value of all the sources of capital.

Hence the overall cost of capital or weighted average cost of capital (JV4CC) using market value weight may be calculated as:

 $WACC = K_{e} = K_{e} E_{M}/M + K_{r} R_{M}/M + K_{p} P_{M}/M + K_{d} D_{M}/m$

Where, $K_0 = Overall \cos t$ of capital,

 $K_{e} = Cost of equity,$

 $E_{M} =$ Market value of equity capital,

M = Total market value of all the sources of capital,

 $K_r = Cost of retained earnings.$

 R_{M} = Market value of retained earnings,

 $K_{p} = Cost of preference shares,$

 P_{M} = Market value of preference shares,

 $K_d = Cost of debt$, and

 D_{M} = Market value of debt.

Example 10.7

Capital structure of Anuradha Ltd., along with respective specific cost of capital is given below. You are required to compute the weighted average cost of capital using: (a) Book value as weight and (b) Market value as weight.

So, weighted average cost of capital using book value weight is 13.6% and using market value weight is 13.89%.

Example 10.8

Jamuna Ltd has the following capital structure and, after tax, costs for the different sources of fund used:

Source	Ar	Amount (Rs.) 6,00,000 3,00,000 2,40,000		After-tax Cost		
Equity share capital				13%		
Preference share capita	1			8%		
Debentures				6		
Retained earnings		60,000	99	9%		
You are required to calculate	the Weighte	d Average Co	st of Capital.			
Solution :	0	0				
Computation	of Weighted	Average Cos	st of Capital			
Source	Amount Rs.	Proportion	After-tax Cost	Weighted Cost		
(1)	(2)	(3)	(4)	$(5) = (3) \times (4)$		
Equity share capital	6,00,000	0.50	0.13	0.065		
Equity share capital Preference share capital	6,00,000 3,00,000	0.50	0.13	0.065		
Equity share capital Preference share capital Debentures	6,00,000 3,00,000 2,40,000	0.50 0.25 0.20	0.13 0.08 005	0.065		
Equity share capital Preference share capital Debentures Retained earnings	6,00,000 3,00,000 2,40,000 60,000	0.50 0.25 0.20 0.05	0.13 0.08 005 0.09	0.065 0.02 0.01 0.0045		

:. Weighted Average Cost of Capital (K_o) = $0.0995 \times 100 = 9.95\%$.

Example 10.9

Excel Ltd. has assets of Rs. 1,60,000 which have been financed with Rs. 52,000 of debt and Rs. 90,000 of equity and a general reserve of Rs. 18,000. The firm's total profits after interest and taxes for the year ended 31st March 2006 were Rs. 13,500. It pays 8% interest on borrowed funds and is in the 50% tax bracket. It has 900 equity shares of Rs. 100 each selling at a market price of Rs. 120 per share.

What is the Weighted Average Cost of Capital?

Solution :

- (1) Earnings per Share = $\frac{\text{Earnings after interest and taxes}}{\text{Number of Equity Shares}} = \frac{13,500}{900} = \text{Rs. 15.}$
- (2) Computation of specific cost of each source :
 - (i) Cost of Debt $(K_d) = r(1 t) = 8\% (1 0.5) = 4\%$
 - (ii) Cost of Equity $(K_e) = \frac{EPS}{P} = \frac{Rs. 15}{Rs. 120} = 0.125$ or 12.5%. (iii) Cost of retained earnings (K_r) is equivalent to cost of equity (K_e) i.e., 12.5%.

Statement Showing the Weighted Average Cost of Capital

Source	Amount (Rs.)	Proportion	After-tax Cost	Weighted Cost
(1)	(2)	(3)	(4)	(5) = $(3) \times (4)$
Equity share capital	90,000	0.5625	0.125	0.070
Reserves	18,000	0.1125	0.125	0.014
Debt	52,000	0.325	0.04	0.013
	1,60,000	1.00	1	0.097

: Weighted Average Cost of Capital (K) = 0.097 × 100 = 9.7%.

Example 10.10

RIL Ltd. opts for the following capital structure:

Equity Shares (1,00,000 shares)	50,00,000
1.5% Debentures	50,00,000
Total	1.00.00.000

The company is expected to declare a dividend of Rs. 5 per share. The market price per share is Rs. 50. The dividend is expected to grow at 10%.

Compute weighted average cost of capital of RIL Ltd. assuming 50% tax rate.

[C.U. B.Com. (Hons.) 2008]

Solution :

Computation of specific cost of each source :

(i) Cost of Debenture $(K_d) = r (1 - t) = 15\% (1 - 0.5) = 7.5\%$

(ii) Cost of Equity share $(K_e) = \frac{D}{P} + g = \frac{Rs.5}{Rs.50} + 10\% = 20\%$

Statement Showing Weighted Av	verage Cost of C	apital
-------------------------------	------------------	--------

Source	Amount (Rs.)	Proportion	After-tax Cost	Weighted Cost
(1)	(2)	(3)	(4)	(5) = $(3) \times (4)$
Equity share capital	50,00,000	0.50	0.20	0.1000
Debentures	50,00,000	0.50	0.075	0.0375
	10,00,000	1.00		0.1375

:. Weighted Average Cost of Capital (K) = 0.1375 × 100 = 13.75%

Example 10.11

In considering the most desirable capital structure for a company, the following estimates of the cost Debt and Equity Capital (after tax) have been made at various levels of debt-equity mix:

Debt as percentage of total capital employed	Cost of debt %	Cost of equity %
0	5.0	12.00
10	5.0	12.00
20	5.0	12.50
30	5.50	13.0
40	6.0	14.0
50	6.50	16.0
60	7.0	20.0

You are required to determine the optimum debt-equity mix for the company by calculating composite cost of capital.

Optimal debt-equity mix for the company is at the point where the composite cost of capital is minimum. Hence, the composite cost of capital is minimum (9.75%) at the debt-equity mix of 3: 7 (i.e., 30% debt and 70% equity). Therefore, 30% of debt and 70% equity mix would be an optimal debt-equity mix for the company.

10.4 CAPITALASSET PRICING MODEL (CAPM)

It is a model that describes the relationship between risk and expected return. It explains the behaviour of security prices. The relationship between expected return and unavoidable risk, and the valuation of securities that follows, is the essence of the capital asset pricing model. This model divides the cost of equity into two components: one, risk-free return generally obtained in government securities and second risk premium for investing in shares. This model was developed by **William F. Shape** and **John Lintner** in the **1960s**. This model is simple in concept and has read world applicability.

Risk may be defined as the likelihood that the actual return from an investment will be less than the expected or forecast return. In other words it is the variability of return from an investment.

In case of securities, there are two types of risks. (1) Unsystematic risk or diversifiable risk or avoidable risk (2) Systematic risk or unavoidable risk. The unsystematic risk is specific to a particular firm such as strikes, loss of a big contract, increase in customs duty by the government of the materials used by the firm etc. An investor can eliminate or reduce this risk by diversifying the security investment. He can sell some of these securities and buy securities of other firms. But systematic risk is unavoidable. It affects all firms. It arises on account of the economy–wide uncertainties. It cannot be avoided or reduced through diversification e.g. it may arise due to increase in inflation, war, change in government interest rate policy, change in tax policy etc.

There are two types of securities in which investment can be made. The first is a risk free security whose return (income) over the whole period is known with certainty. For example, in India, Relief Bonds carry a fixed rate of tax free return. It has zero variance or standard deviation. The risk free security will have the same return under all types of economic conditions. The second type of security is risky security like equity shares available in the market. There are many ways to measure risk; some of them are as follows:

(1) **Beta co-efficient :** It is a mathematical vale that measures the risk of one security in terms of its effects on the risk of a group of securities or assets, which is called a portfolio (Portfolio means a combination of securities of various companies held by a firm or an individual combinations of a variety of securities are called portfolio). The expected return on a portfolio is the sum of the returns on individual securities multiplied by their respective weights. Thus it is a weighted average rate of return. It measures market-related risk. A high beta (b) indicates a high level of risk and a low beta represents a low level of risk.

(2) **Standard deviation:** It is a measure of dispersion of expected returns. It is a statistical concept and is used to measure risk from holding a single security, a high std. deviation represents a low risk.

(3) **Co-efficient of variation:** It is measure of relative dispersion of risk. It converts std. deviation of expected values into relative values to enable comparison. The larger the coefficient of variance the larger the relative risk of security.

(4) **Sensitivity analysis:** This is a method of considering a number of the worst (pessimistic), the expected (most likely) and the best (optimistic) return. The difference between optimistic and pessimistic results is the range which is the basic measure of risk. The greater the range, the more risky the security is. The probability distribution is also used to measure the risk. If a particular event is sure to happen, its probability is 100%. If the possibility is that the event is likely to happen 8 times out of 10, the probability is 80%.

(5) **Risk – return relationship:** In order to be acceptable, a higher – risk security must offer a higher forecast return than a lower – risk security. If we draw a graph on which we show expected return and degree of risk the "market line" will be formed, which will slop upwards, suggesting that higher the risk, higher is the return expected.

Basic assumptions: This model is based on following basic assumptions:

- (1) The capital markets are efficient in the sense that share prices are based on all available information.
- (2) Investors are risk-averse. They prefer the securities giving the highest return for a given level of risk or the lowest risk for a given level of return.

- (3) All investors are in general agreement about the expected return and risk of the securities.
- (4) Their expectations are based on single-time period (i.e. one-year period)
- (5) All investors can lend or borrow at a risk-free rate of interest.
- (6) No investor is large enough to influence the market price of a share.

The CAPM provides a framework of measuring the systematic risk of an individual security.

10.5 CLASSIFICATION OF COST OF CAPITALAND ITS MEASUREMENT

The following are the various types of cost of capital:

a) Explicit cost and implicit cost: The explicit cost of any sources of capital may be defined as the discount rate that equates the present value of the cash inflows that are incremental to the taking of the financing opportunity with the present value of its incremental cash outflow. When a firm raises funds from different sources, it involves a series of cash flows. At its first stage, there is only a cash inflow by the amount raised which is followed by a series of cash outflows in the form of interest payments, repayment of principal or repayment of dividends.

Therefore, if a firm issues, 1,000, 8% debentures of Rs. 100 each redeemable, after 10 years at par, there will be an inflow of cash to the extent of Rs. 1,00,000 (1,000 x Rs. 100) at the beginning, but the annual cash outflow will be Rs. 8,000 (Rs. 1,00,000 x 8/100) in the form of interest.

There will also be an outflow of Rs. 1,00,000 at the end of the 10th year when the debentures will be redeemed. We know that a firm can raise its funds by issuing equity or preference shares, or debentures, or by selling assets etc., which are known as sources of funds. The cash outlays for this purpose may be in the form of interest/dividends, repayments of principal. The equation used in general in order to calculate the explicit cost of capital is:

$$I_0 = \frac{C_1}{(1 + k)^1} + \frac{C_2}{(1 + k)^2} + \frac{C_3}{(1 + k)^3} + \dots + \frac{C_n}{(1 + k)^n}$$

Where, $I_0 =$ Net funds received by the firm at time o;

- $C_1 = Outflow$ in the respective period;
- k = Explicit Cost of Capital;
- n = Period for which funds are provided.

It is evident from the above equation that I is the internal rate of return of the cash flow of financing opportunity. Therefore, if a firm takes any non-interest bearing loan, there will be no explicit cost since there is no outflow of cash by way of interest payment although the principal must be repaid. From the above, it becomes clear that the explicit cost will arise when capital is raised and which is also the IRR of the financial opportunity. Implicit cost of capital, on the other hand, arises when a firm considers alternative uses of the funds raised. That is, it is the opportunity cost. In other words, it is the rate of return which is available on other investment in addition to what is being considered at present. To sum up, the implicit cost may be defined as the rate of return associated with the best investment opportunity for the firm and its shareholders that will be foregone if the project presently under consideration by the firm were accepted. In this respect it may be mentioned that if earnings are retained by a firm, the implicit cost is the income which the shareholders could have earned if such earnings would have been distributed and invested by them. Therefore, explicit cost will arise only when funds are raised, whereas implicit cost will arise when they are used.

b) Future cost and historical cost: Future Costs are the expected costs of funds for financing a particular project. They are very significant while making financial decisions. For instance, at the time of taking financial decisions about the capital expenditure, a comparison is to be made between the expected IRR and the expected cost of funds for financing the same, i.e. the relevant costs here are future costs.

Historical costs are those costs which have already been incurred in order to finance a particular project. They are useful while projecting future costs. In short, historical costs are very important by the amount they keep in predicting the future costs. Because, they supply an evaluation of performance in comparison with standard and/or predetermined costs.

c) **Specific cost:** The cost of each component of capital, viz., equity shares, preference shares, debentures, loans etc. are termed specific or component cost of capital which is the most appealing concept. While determining the average cost of capital, it requires consideration about the cost of specific methods for financing the projects.

This is particularly useful where the profitability of the project is evaluated on the basis of the specific source of funds taken for financing the said project. For instance, if the estimated cost of equity capital of a firm becomes 12%, that project which is financed by the equity shareholders' fund will be accepted provided the same will yield a return of 12%.

- d) Average cost and marginal cost : The average cost of capital is the weighted average cost of each component of the funds invested by the firm for a particular project, i.e. percentage or proportionate cost of each element in the total investment. The weights are in proportion to the shares of each component of capital in the total capital structure or investment. But average cost has the following three computational problems:
 - (i) It refers to the measurement of cost of each specific source of capital;
 - (ii) It also requires the assignment of proper weights to each component of capital;
 - (iii) Is the overall cost of capital (discussed subsequently) affected by the changes in the composition of the capital?

According to the Terminology of Cost Accountancy (ICMA, Para 3.603), Marginal Cost is the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit. Same principle is being followed in cost of capital. That is, marginal cost of capital may be defined as the cost of obtaining another rupee of new capital. Generally, a firm raises a certain amount of funds for fixed capital investment. But marginal cost of capital

reveals the cost of additional amount of capital which are raised by a firm for current and/or fixed capital investment. When the firm procures additional capital from one particular source only i.e. not from the different sources in given proportion the marginal cost, in that case, is known as specific or explicit cost of capital. In other words, marginal cost of capital may be more or may be less than the average cost of capital of a firm.

Example 10.12

A firm presents the following information relating to cost of capital:

Sources	Amount	After-tax Cost of	
	Rs.	Capital	
Equity	50,000	12%	
Debt	50,000	4%	

The firm wants to raise a fund of Rs. 25,000 for the purpose of an investment proposal. It also decides to take the same from a financial institution at a cost of 10%. Compute the marginal cost of capital and compare the same with average cost of capital before and after additional financing, assuming that the corporate rate of tax is 50%.

Solution:

It becomes clear from the above problem that the marginal cost is Rs. 25,000 which is 10% before tax and 5% after tax (i.e. 10% - 50% of 10%). The same is also known as specific or explicit cost of financing Rs. 25,000 since the source is only one, i.e. financial institution. But the same also differs from the average cost calculated as:

Thus, it is evident from the above that the weighted average cost comes down from 8% to 7.4%. The cost of new debt is higher than the cost of old debt. Again, the cost of new debt is lower than the cost of equity capital. Therefore, the average cost of capital reduces since there is an increase in the proportion of debt capital to total capital invested.

While raising additional capital a firm must concentrate on the optimum capital structure and should use the different sources of financing proportionately for the purpose of main-taining the optimum capital structure. In the circumstance, the present book value may be considered as weight in order to compute the average cost of capital. If the capital is raised from different sources at a given proportion, it needs a computation of average cost of capital to know the cost of the total additional amount raised.' So, in this case, marginal cost of capital may also be known as weighted average cost for the same. There will be no difference between the two provided there is no change in specific cost.

Consider the following example.

Example 10.13

In Illustration 17, it is considered that the additional amount of Rs. 25,000 will be raised by the firm from equity and debt at the existing specific cost, there will be no difference between the weighted average cost and the marginal cost of capital as both of them will be one or the same as presented:

Solution :				
Sources	Amount Rs.	Proportion Tax (%)	Specific Cost after Tax (%)	Marginal Cost (%)
Equity	12,500	0.5	12	6.0
Debt	12,500	0.5	4	2.0
		1.0		8.0

Therefore, the cost of raising Rs. 25,000 is only 8%, which is the marginal cost. The same should, be measured with the help of weighted average cost for raising the additional fund of Rs. 25,000.

It has already been highlighted above that, if the specific cost changes, there will be a difference between the marginal cost of capital and the average cost of capital of a firm even if additional capital is procured at a given proportion. It should be remembered that the marginal cost of capital will continue to be the weighted average cost of new capital for a firm.

The following illustration will, however, make the principle clear:

Example 10.14

If it is assumed that cost of debt is 10% (before tax) and rate of tax is 50% and the firm prefers to raise Rs. 25,000 proportionately, compute the marginal cost of capital and the average cost of capital.

It becomes clear from the above that overall cost of capital is raised upward as there is an increase in the cost of new debt capital. The same actually differs from the marginal cost of 8.5% for raising additional capital of Rs. 25,000 to 8.1%.

The relationship between marginal cost and average cost of capital may be presented with the help of a graph given by Brigham:



Fig. 10.1 : Relationship between Marginal Cost and Average Cost of Capital

From Fig. 10.1, it becomes clear that if additional capital is raised up to the amount X, the marginal cost of capital (MCC) and also the average cost of capital (ACC) are identical. Therefore, both of them are rising although the ACC rises at a lesser rate than the MCC.

10.6 DIFFERENCE BETWEEN COST OF CAPITAL AND COST OF EQUITY

Cost of capital:

The term cost of capital refers to the minimum rate of return a firm must earn on its investments so that the market value of equity shares of the company does not fall. The source of finance is the minimum return expected by its supplies. The expected return

depends on the degree of risk assumed by investors. Debt is a cheaper source of funds than equity. Using the component cost of capital as a criterion for financing decisions, a firm would always like to employ debt, since it is the cheapest of all the sources.

The cost of capital criterion ignores risk and the impact on equity value and cost. The impact of financing decision on the overall capital should be evaluated and the criterion should be to minimize the overall cost of capital or to maximize the value of the firm. But, a company cannot continuously minimize its overall cost of capital by employing debt.

Beyond a stage, debt is more expensive because of the increased risk of excessive debt to creditors as well as to shareholders. When the debt component of capital increase risk of creditors increases as they expect a higher interest rate. Excessive debt burden also makes the shareholders' position risky. Therefore, there must be a combination of equity and debt at which the firm's overall cost of capital will be minimum and the market value per share will be the maximum.

Cost of equity:

The cost of equity capital is most difficult to compute. Some people argue that the equity capital is cost free as the Company is not legally bound to pay the dividends to equity shareholders. But this is not true. Shareholders will invest their funds with the expectation of dividends.

The market value of equity share depends on the dividends expected by shareholders, the book value of firm and the growth in the value of firm. Thus the required rate of return which equates the present value of the expected dividends with the market value of equity share is the cost of equity capital.

The cost of equity capital may be expressed as the minimum rate of return that must be earned on new equity share capital financed investment in order to keep the earnings available to be the existing equity shareholders of the firm unchanged. While calculating cost of equity, the tax on dividends payable by the company is also to be taken into account. There are various methods of calculating cost of equity capital.

10.7 SUMMARY

The cost of capital is comprised of the costs of debt, preferred stock, and common stock. The formula for the cost of capital is comprised of separate calculations for all three of these items, which must then be combined to derive the total cost of capital on a weighted average basis. To derive the cost of debt, multiply the interest expense associated with the debt by the inverse of the tax rate percentage, and divide the result by the amount of debt outstanding. The amount of debt outstanding that is used in the denominator should include any transactional fees associated with the acquisition of the debt, as well as any premiums or discounts on sale of the debt. These fees, premiums, or discounts should be gradually amortized over the life of the debt, so that the amount included in the denominator will decrease over time. The calculation of the cost of common stock requires a different type of calculation. It is composed of three types of return: a risk-free return, an average rate of return to be expected from a typical broad-based group of stocks, and a differential return that is based on the risk of the specific stock in comparison to the larger group of stocks. The risk-free rate of return is derived from the return on a U.S. government security. The average rate of return can be derived from any large cluster of stocks, such as the Standard & Poor's 500 or the Dow Jones Industrials. The return related to risk is called a stock's beta; it is regularly calculated and published by several investment services for publicly-held companies, such as Value Line. A beta value of less than one indicates a level of rate-of-return risk that is lower than average, while a beta greater than one would indicate an increasing degree of risk in the rate of return.

Retained earnings refer to undistributed profits of a firm. Out of the total earnings, firms generally distribute only past of them in the form of dividends and the rest will be retained within the firms. Since no dividend is required to paid on retained earnings, it is stated that 'retained earnings carry no cost'. But this approach is not appropriate. Retained earnings has the opportunity cost of dividends in alternative investment becomes cost if retained earnings. Rights issue is an invitation to the existing shareholders to subscribe for further shares to be issued by a company. A right simply means an option to buy certain shares at a privileged price which is considerably below the market price. It is generally felt that the cost of issue would be different from the cost of direct issue. But for two reasons, the real cost of rights issue would be the same as the cost of direct issue of share to the public.
i) The shareholder who is not interested in the rights issue, sells his rights and obtain cash. Then he has the old share plus the money obtained from selling the rights. ii) Otherwise, the shareholder exercise his rights and acquires the share the new share, in addition to the old shares. Thus, the present wealth of the shareholders in both the cases remains the same.

10.8 GLOSSARY

Weighted average cost of capital WACC: WACC is the arithmetic average (mean) capital cost that weights the contribution of each capital source by the proportion of total funding it provides. "Weighted average cost of capital" usually appears as an annual percentage.

- **Cost of borrowing:** Cost of borrowing refers to the total amount a debtor pays to secure a loan and use funds, including financing costs, account maintenance, loan origination, and other loan-related expenses. "Cost of borrowing" sums appear as *amounts*, in currency units such as dollars, pounds, or euro.
- **Cost of debt:** Cost of debt is the overall average rate an organization pays on all its obligations. These typically consist of bonds and bank loans. "Cost of debt" usually appears as an annual percentage.
- **Cost of equity:** Cost of equity is part of a company's <u>"capital structure</u>." It measures the returns demanded by stock market investors who will bear the risks of ownership. It usually appears as an annual percentage.
- **Cost of funds:** This term refers to the interest cost that financial institutions pay for the use of money. "Cost of funds" usually appears as an annual percentage.
- **Cost of funds index (COFI):** A Cost of Funds Index (COFI) refers to an established Cost of Funds rate for a region. In the United States, for instance, a regional COFI might be set by a Federal Home Loan Bank.
- **CAPM:** Capital Asset Pricing Model (CAPM) is a useful technique of measuring risk factor as well as required rate of return. It is a useful model in dealing with risk.
- **Cost of apital:** Is reward for use of capital. It is price paid to the inrestion for the use of capital provided lup hire. It is investors required rate of return.

10.9 SELFASSESSMENT QUESTIONS

	What is the difference between book value and market value?
	Differentiate between cost of capital and cost of equity.
(LESSON END EXERCISE
	What is marginal cost of capital?
	Explain cost of borrowing.

10.11 SUGGESTED READINGS

- N Ramachandra., Financial Accounting For Management, Tata Mgraw Hill.
- Sharan. Fundamentals Of Financial Management, Third Edition, Pearson Publications.
- Desai, Vasant (2005). The Indian Financial System and Development, 1st Edition, Himalayan Publishing House.

LEVERAGES AND CAPITAL STRUCTURE

UNIT-III

Lesson No. 11

LEVERAGE - CONCEPT AND TYPE OF LEVERAGE

STRUCTURE

- 11.1 Introduction
- 11.2 Objectives
- 11.3 Concept of leverage

11.4 Types of leverage

- 11.4.1 Operating leverage
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11.1 INTRODUCTION

The term leverage, in general, refers to a relationship between two inter-related variables. It refers to an increased means of accomplishing some purpose. Leverage is used to lifting heavy objects, which may not be otherwise possible. In the financial point of view, leverage refers to furnish the ability to use fixed cost assets or funds to increase the return to its shareholders. With reference to a business firm, these variables may be costs, output, sales revenue, EBIT, Earnings Per share (EPS) etc. In financial analysis, the leverage reflects the responsiveness or influence of one financial variable over some other financial variable. Thus, leverage refers to relationship between two variables as reflected in a unit change in one variable consequent upon a unit change in another variable. In financial management Operating leverage, financial leverage and Combined Leverage is calculated. The Operating relationship establishes the relationship between sales and EBIT. It measures the effect of change in sales revenue on the level of EBIT. Operating leverage appears as a result of fixed cost. The financial leverage measures the responsiveness of the EPS for given change in EBIT. The financial leverage appears as a result of fixed financial charge i.e. interest and preference dividend. Combined leverage may also be ascertained to measures the % change in EPS for a % change in the sales. Financial leverage measures the extent to which the cost of project has been funded by borrowed money as compared to owner's equity. EBIT - EPS Analysis indicates the projected EPS for different financial plans. In Leverage analysis the relationship between two interrelated variables is established.

11.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain the meaning of financial leverage
- identify the relationship between risk and leverage
- compare the operating leverage and financial leverage
- acquaint with the concept of working capital leverage and total leverage

11.3 CONCEPT OF LEVERAGE

The leverage may be defined as the % change in one variable divided by the % change in some other variable or variables. Impliedly, the numerator is the dependent

variable, say X, and the denominator is the independent variable, say Y. The leverage analysis thus, reflects as to how responsiveness is the dependent variable to a change in the independent variables.

James Horne defined leverage as, "the employment of an asset or fund for which the firm pays a fixed cost or fixed return.

Leverage = $\frac{\% \text{ Change in the dependent variable}}{\% \text{ Change in the Independent variable}}$

For example, A firm increased its sales promotion expenses from Rs 5,000 to Rs. 6,000 i.e. an increase of 20%. This resulted in the increase in no. Of unit sold from 200 to 300 i.e. an increase of 50%. The leverage may be defined as

This means that % increase in number of unit sold is 2.5 times that of % increase in sales promotion expenses. The operating profit of a firm is a direct consequence of the sales revenue of the firm and in turn operating profit determines the profit available to the equity shareholders. The functional relationship between the sales revenue and the EPS can be established through operating profit (EBIT) as follow:

Sales Revenue	EBIT
-Variable costs	- Interest
Contribution	Profit before tax
-Fixed Costs	- Tax

EBIT

The left hand side sows that the level of EBIT depends upon the level of sales revenue and the right hand side shoes that the level of profit after tax or EPS depends upon the level of EBIT. The relationship between Sales revenue and EBIT is defined as operating leverage and the relationship between EBIT and EPS is defined as financial leverage. The direct relationship between sales revenue and EPS can also be established

Profit after Tax (EPS)

by combining the operating leverage and financial leverage and is defined as the Composite leverage. Thus, leverage can be classified into three major headings according to the nature of the finance mix of the company.



The company may use financial leverage or operating leverage, to increase the EBIT and EPS. The various types of leverages are explained below:

11.4 TYPES OF LEVERAGE

11.4.1 OPERATIVE LEVERAGE

The leverage associated with investment activities is called as operating leverage. It is caused due to fixed operating expenses in the company. Operating leverage may be defined as the company's ability to use fixed operating costs to magnify the effects of changes in sales on its earnings before interest and taxes. Operating leverage consists of two important costs viz., fixed cost and variable cost. When the company is said to have a high degree of operating leverage if it employs a great amount of fixed cost and smaller amount of variable cost. Thus, the degree of operating leverage depends upon the amount of various cost structure.

Whenever, the % change in EBIT resulting from given % change in sales is greater than the % change in sales, the OL exists and the relationship is known as the DOL (Degree of Operating Leverage). This means that as long as the DOL is greater than 1, there is an OL. The OL emerges as result of existence of fixed element in the cost structure of the firm. The OL, therefore, may be defined as firm's position or ability to magnify the effect of change in sales over the level of EBIT. The level of fixed costs, which is instrumental in bringing this magnifying effect, also determines the extent of this effect. Higher the level of fixed costs in relation to variable costs, greater would be the DOL. The DOL may, at any particular sales volume, also be calculated as a ratio of contribution to the EBIT.

Operating leverage can be determined with the help of a break even analysis.

Operating leverage can be calculated with the help of the following formula:

 $Operating Leverage = \frac{Contribution}{Operating Profit (EBIT)}$

Degree of operating leverage

When the sale increases or decreases, the EBIT also changes. The operating leverage measures the relationship between the sales revenue and the EBIT or in other words, it measures the effect of change in sales revenue on the level of EBIT. The degree of operating leverage may be defined as percentage change in the operating income (EBIT) resulting from a percentage change in the sales. It can be calculated with the help of the following formula:

$$DOL = \frac{Percentage change in EBIT}{Percentage change in Sale}$$

For example, ABC Ltd. sells 1000 unit @ Rs.10 per unit. The cost of production is Rs.7 per unit and the whole of the cost is variable in nature. The profit of the firm is $1,000 \times (Rs.10 - Rs.7) = Rs.3,000$. Suppose, the firm is able to increase its sales level by 40% resulting in total sales of 1400 units. The profit of the firm would now be 1400 x (Rs.10 - Rs.7) = Rs. 4200. The operating leverage of the firm is

$$DOL = \frac{Percentage change in EBIT}{Percentage change in Sale}$$
$$DOL = \frac{Rs. \frac{1200}{3000}}{Rs. \frac{4000}{10,000}}$$
$$= 1$$

The Operating Leverage of 1 denotes that the EBIT level increases or decreases in direct proportion to the increase or decrease in sales level. This is due to fact that there is no fixed costs and total cost is variable in nature. Thus, impliedly, the profit level i.e. the EBIT varies in direct proportion to the sales level. So EBIT varies in direct proportion to sales level.

Thus, on the basis of the above analysis, the OL may be interpreted as follows:

- 1. The OL is the % change in EBIT as a result of 1% change in sales. OL arises as a result of fixed cost in the cost structure. If there is no fixed cost, there will be no OL and the % change in EBIT will be same as % change in sales.
- 2. A positive DOL means that the firm is operating at a level higher than the breakeven level and both the EBIT and sales will vary in the same direction.
- 3. A negative DOL means that the firm is operating at a level lower tan the breakeven level; and the EBIT will be negative.

Significance and uses of operating leverage

Operating leverage is one of the techniques to measure the impact of changes in sales which lead for change in the profits of the company. If any change in the sales, it will lead to corresponding changes in profit. Operating leverage helps to identify the position of fixed cost and variable cost. Operating leverage measures the relationship between the sales and revenue of the company during a particular period. Operating leverage helps to understand the level of fixed cost which is invested in the operating expenses of business activities. It describes the overall position of the fixed operating cost.

Analysis of operating leverage of a firm is very useful to the financial manger. It tells the impact of changes in sales on operating income. A firm having higher DOL (Degree of operating Leverage) can experience a magnified effect on EBIT for even a small change in sales level. Higher DOL can dramatically increase the operating profits. But if there is decline in sales level, EBIT may be wiped-out and a loss may be operated. As explained earlier, the operating leverage depends on fixed costs. If the fixed costs are higher, the higher would be firm's operating leverage and its operating risks. Higher operating leverage indicates that the break-even point would be reached at a high level of sales. Also, in the case of higher operating leverage, the margin of safety would be low. Therefore, it is preferred to operate sufficiently above break-even point to avoid the danger of fluctuations in sales and profits.

Operating Leverage explains the effect of change in sales on EBIT. When there is high operating leverage, a small rise in sales will result in a larger rise in EBIT. But if there is small drop in sales, EBIT will fall dramatically or may even be wiped off. Thus, existence of high operating leverage reflects high-risk situation. As the operating leverage reaches its maximum near break even point, the firm can protect itself from the dangers of operating leverage and the consequent operating risk by operating sufficiently above the break even point.

11.4.2 FINANCIAL LEVERAGE

A leverage activity with financing activities is called financial leverage. Financial leverage represents the relationship between the company's earnings before interest and taxes (EBIT) or operating profit and the earning available to equity shareholders.

Financial leverage is defined as "the ability of a firm to use fixed financial charges to magnify the effects of changes in EBIT on the earnings per share". It involves the use of funds obtained at a fixed cost in the hope of increasing the return to the shareholders. "The use of long-term fixed interest bearing debt and preference share capital along with share capital is called financial leverage or trading on equity".

Financial leverage may be favourable or unfavourable depends upon the use of fixed cost funds. Favourable financial leverage occurs when the company earns more on the assets purchased with the funds, then the fixed cost of their use. Hence, it is also called as positive financial leverage. Unfavourable financial leverage occurs when the company does not earn as much as the funds cost. Hence, it is also called as negative financial leverage.

In other words, the Financial Leverage (FL) measures the relationship between the EBIT and the EPS and it reflects the effect of change in EBIT on the level of EPS. The FL measures the responsiveness of the EPS to a change in EBIT and is defined as the % change in EPS divided by the % change in EBIT. Symbolically,

 $Financial Leverage = \frac{Operating Profit (EBIT)}{Profit before Tax}$

Hence, the FL may be defined as a % increase in EPS that is associated with a given % increase in the level of EBIT. The increase in EPS of the firm may be more than proportionate for increase in the level of EBIT. In other words, the effect of increase or decrease in EBIT is magnified on the level of EPS. The existence of fixed financing charge is instrumental to bring this magnifying effect and also determines the extent of this effect. Higher the level of fixed financial charge, greater would be the FL.

Degree of financial leverage

Degree of financial leverage may be defined as the percentage change in taxable profit as a result of percentage change in earnings before interest and tax (EBIT). This can be calculated by the following formula :

$$DFL = \frac{Percentage change in taxable income}{Percentage change in operating income}$$

Alternative definition of financial leverage

According to **Gitmar**, "financial leverage is the ability of a firm to use fixed financial changes to magnify the effects of change in EBIT and EPS".

$$DFL = \frac{Percentage change in EPS}{Percentage change in EBIT}$$

On the basis of above analysis, the Financial Leverage can be interpreted as:

(a) The Financial Leverage is a % change in EPS as result of 1% change in EBIT. The FL emerges as a result of fixed financial cost (in the form of interest and preference dividend). If there is no fixed financial liability, there will be no FL. In such a case the % change in EPS will be same as % change in EBIT.

- (b) A positive FL means that the firm is operating at a level of EBIT which is higher than the financial break-even level and both the EBIT and EPS will vary in the same direction as the EBIT changes.
- (c) A negative FL means that the firm is operating at a level lower than the financial break-even level and the EPS will be negative.

Significance and uses of financial leverage

- a. Planning of capital structure: the capital structure is concerned with the raising of long term funds both from the shareholders and long term creditors. A financial manager has to decide about the ratio between fixed cost funds and equity share capital. The effects of borrowing on cost of capital and financial risk have to be discussed before selecting a final capital structure.
- **b. Profit planning:** the EPS is affected by the degree of financial leverage. If the profitability of the concern is increasing ten the fixed cost funds will help in increasing the availability of profits for equity shareholders. Financial leverage is important for profit planning.

Thus, Financial leverage helps to examine the relationship between EBIT and EPS. Financial leverage measures the percentage of change in taxable income to the percentage change in EBIT. Financial leverage locates the correct profitable financial decision regarding capital structure of the company. Financial leverage is one of the important devices which is used to measure the fixed cost proportion with the total capital of the company. If the firm acquires fixed cost funds at a higher cost, then the earnings from those assets, the earning per share and return on equity capital will decrease. The impact of financial leverage can be understood with the help of the following exercise.

Financial BEP

It is the level of EBIT which covers all fixed financing costs of the company. It is the level of EBIT at which EPS is zero.

Indifference Point

It is the point at which different sets of debt ratios (percentage of debt to total capital employed in the company) gives the same EPS.

11.4.3 COMBINED LEVERAGE

The Combined Leverage (CL) is not a distinct type of leverage analysis, rather it is a product of the OL and the FL. Both the financial and operating leverage magnify the

revenue of the firm. Operating leverage reflects the income which is the result of the production. On the other hand, the financial leverage of the result of financial decisions. The composite leverage focuses the attention on the entries income of the concern. The risk factor should be properly assessed by the management before using the composite leverage. The high financial leverage may be offset against low operating leverage vice versa. Combined leverage is also called as composite leverage or total leverage. Combined leverage expresses the relationship between the revenue in the account of sales and the taxable income. The CL may be defined as the % change in EPS for a given % change in the sales level and may be calculated as follows:

$$DCL = DOL \times DFL = = \frac{Con tribution}{EBIT} = \frac{EBIT}{PBT} = \frac{Contribution}{PBT}$$

Degree of combined leverage

The percentage change in a firm's earning per share (EPS) results from one percent change in sales. This is also equal to the firm's degree of operating leverage (DOL) times its degree of financial leverage (DFL) at a particular level of sales.

Degree of combined leverage = $\frac{\text{Percentage change in EPS}}{\text{Percentage change in Sales}}$

The Combined Leverage is interpreted as:

- (a) The Combined Leverage is the % change in EPS resulting from a 1% change in sales level.
- (b) A positive CL means that the leverage is being computed for a sales level higher than the break even level and both the EPS and sales will vary in the same direction.
- (c) A negative CL means that the leverage is being calculated for a sales level lower than the financial break even level and EPS will be negative.

Illustration 11.1: Calculate the Degree of Operating Leverage (DOL), Degree of Financial leverage (DFL) and the Degree of Combined Leverage (DCL) for the following firms and interpret the results.

Firm A	Firm B	Firm C
60,000	15,000	1,00,000
7,000	14,000	1,500
0.20	1.50	0.02
4,000	8,000	
0.60	5.00	0.10
	Firm A 60,000 7,000 0.20 4,000 0.60	Firm AFirm B60,00015,0007,00014,0000.201.504,0008,0000.605.00

Solution:

	Firm A	Firm B	Firm C	
Output (units)	60,000	15,000	1,00,000	
Selling price per unit (Rs)	0.60	5.00	0.10	
Variable cost per unit (Rs.) <u>0.20</u>	<u>1.50</u>	<u>0.02</u>	
Contribution per unit	0.40	<u>3.50</u>	<u>0.08</u>	
Total Contribution	Rs.24,000	Rs.52,500	RS.8,000	
Less fixed costs	7,000	14,000	1,500	
EBIT	17,000	38,500	6,500	
EBIT Less Interest	17,000 <u>4,000</u>	38,500 <u>8,000</u>	6,500	
EBIT Less Interest Profit before Tax	17,000 <u>4,000</u> <u>13,00</u> 0	38,500 <u>8,000</u> <u>30,500</u>	6,500 <u>6,500</u>	

Degree of Operating Leverage

Contribution/EBIT	24,000/17,000	52,500/38,000	8,000/6,500
	= 1.41	=1.36	= 1.23
Degree of Financial	Leverage		
EBIT/PBT	17,000/13,000	38,500/30,500	6,500/6,500
	= 1.31	= 1.26	= 1.00
Degree of Combined	l Leverage		
Contribution/ EBIT	24,000/13,000	52,500/30,500	8,000/6,500
	= 1.85	= 1.72	= 1.23

Illustration 11.2: A firm has sales of Rs. 10,00,000, variable cost of Rs. 7,00,000 and fixed costs of Rs. 2,00,000 and debt of Rs. 5,00,000 at 10% rate of interest. What are the operating, financial and combined leverages. If the firm wants to double its earnings before interest and tax (EBIT), how much of a rise in sales would be needed on a percentage basis?

Solution:

Statement of Existing Profit

Sales		Rs.10,00,000
Less Variable cost		7,00,000
Contribution		3,00,000
Less fixed cost		2,00,000
EBIT		1,00,000
Less Interest @ 10% or	n 5,00,000	50,000
Profit after Tax		50,000
Operating leverage	Contribution/ EBI	T = 3,00,000/1,00,000 = 3
Financial Leverage	EBIT/PBT	= 1,00,000/50,000 = 2
Combined Leverage		= 3x 2 = 6

Statement of sales needed to double EBIT

Operating Leverage is 3 times i.e. 33 - 1/3% increase in sales volume causes a 100% increase in operating profit or EBIT. Thus, at the sales of Rs. 13,33,333, operating profit or EBIT will become Rs. 2,00,000 i.e. double existing one.

Verification:

Sales	Rs.13,33,333
Variable cost (70%)	<u>9,33,333</u>
Contribution	4,00,000
Fixed Costs	<u>2,00,000</u>
EBIT	<u>2,00,000</u>

Illustration 11.3 : The balance sheet of Well Established Company is as follows:

Liabilities	Amount	Assets	Amount
Equity share capital	60,000	Fixed Assets	1,50,000
Retained Earnings	20,000	Current Assets	50,000
10% long term debt	80,000		
Current Liabilities	<u>40,000</u>		
	<u>2,00,000</u>		<u>2,00,000</u>

The company's total assets turnover ratio is 3, its fixed operating costs are Rs.1,00,000 and its variable operating cost ratio is 40%. The income tax rate is 50%. Calculate the different types of leverages given that the face value of share is Rs.10.

Solution: Total Assets Turnover Ratio = Sales / Total Assets

3 = Sales/2,00,000

Sales	6,00,000
Variable Operating Cost (40%)	<u>2,40,000</u>
Contribution	3,60,000
Less Fixed Operating Cost	<u>1,00,000</u>
EBIT	2,60,000
Less interest (10% of 80,000)	<u>8,000</u>
PBT	2,52,000
Tax at 50%	<u>1,26,000</u>

PAT	1,26,000	
Number of shares	6,000	
EPS	Rs.21	
Degree of Operating Leverage = Contribution/EBIT		
= 3,60,000/2,60,000 = 1.38		
Degree of Financial leverage = EBIT / PBT		
= 2,60,000/2,52,000 = 1.03		
Degree of Combined Leverage $=1.38 \times 1.03 = 1.42$		

Illustration 11.4: The following information is available for ABC & Co.

EBIT	Rs. 11,20,000
Profit before Tax	3,20,000
Fixed Costs	7,00,000

Calculate % change in EPS if the sales are expected to increase by 5%.

Solution: In order to find out the % change in EPS as a result of % change in sales, the combined leverage should be calculated as follows:

Operating Leverage = Contribution/EBIT

= Rs.11,20,000 + Rs. 7,00,000/11,20,000

=1.625

Financial Leverage = EBIT / Profit before Tax

=Rs. 11,20,000/3,20,000

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= 3.5
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Combined Leverage = Contribution/ Profit before Tax = OL x FL

= 1.625 x 3.5 = 5.69

The combined leverage of 5.69 implies that for 1% change in sales level, the % change in EPS would be 5.69% So, if the sales are expected to increase by 5%, then the % increase in EPS would be $5 \times 5.69 = 28.45\%$.

Illustration 11.5: The data relating to two companies are as given below:

	Company A	Company B
Capital	Rs.6,00,000	Rs.3,50,000
Debentures	Rs. 4,00,000	6,50,000
Output (units) per annum	60,000	15,000
Selling price/unit	Rs.30	250
Fixed costs per annum	00,0070,	14,00,000
Variable cost per unit	10	75

You are required to calculate the Operating leverage, Financial leverage and Combined Leverage of two companies.

Solution: Computation of Operating leverage, Financial Leverage and Combined leverage

	Company A	Company B	
Output (units) per annum	60,000	15,000	
Selling price/unit	Rs.30	250	
Sales Revenue	18,00,000	37,50,000	
Less variable costs			
@ Rs.10 and Rs.75	6,00,000	11,25,000	
Contribution	12,00,000	26,25,000	
Less fixed costs	7,00,000	14,00,000	
EBIT	5,00,000	12,25,000	
Less Interest @ 12%			
on debentures	48,000	78,000	
PBT	4,52,000	11,47,000	
DOL = Contribution/EBIT	12,00,000/5,00,0	00 26,25,000/12,25,000	
	= 2.4	= 2.14	
$\mathbf{DFL} = \mathbf{EBIT} / \mathbf{PBT} \qquad 5,00,0$	000/4,52,000	12,25,000/11,47,000	
1.1	1	=1.07	
$\mathbf{DCL} = \mathrm{DOL} \ \mathbf{x} \ \mathrm{DFL} \qquad 2.3$	14 x 1.11 = 2.66	2.14 x 1.07 = 2.2	

Illustration 11.6: X Corporation has estimated that for a new product its break-even point is 2,000 units if the item is sold for Rs. 14 per unit, the cost accounting department has currently identified variable cost of Rs. 9 per unit. Calculate the degree of operating leverage for sales volume of 2,500 units and 3,000 units. What do you infer from the degree of operating leverage at the sales volume of 2,500 units and 3,000 units and 3,000 units and their difference if any?

Particulars	2500 units	3000 units
Sales @ Rs.14 per unit	35,000	42,000
Variable cost	22,500	27,000
Contribution	12,500	15,000
Fixed Cost (2,000 x (Rs.14 – 9)	10,000	10,000
EBIT	2,500	5,000
Operating Leverage		
= Contribution/ EBIT	12,500/2,500	15,000/5,000
	= 5	= 3

Solution: Statement of Operating Leverage

Illustration 11.7: The following data is available for XYZ Ltd.

Sales	Rs. 2,00,000
Less: Variable cost	60,000
Contribution	1,40,000
Fixed Cost	1,00,000
EBIT	40,000
Less Interest	5,000
Profit before tax	35,000

Find out:

- (a) Using concept of financial leverage, by what percentage will the taxable income increase, if EBIT increases by 6%.
- (b) Using the concept of operating leverage, by what percentage will EBIT increase if there is 10% increase in sales and,
- (c) Using the concept of leverage, by what percentage will the taxable income increase if the sales increase by 6%. Also verify the results in view of the above figures.

Solution:

(i) Degree of Financial Leverage:

FL = EBIT/Profit before Tax = 40,000/35,000 = 1.15

If EBIT increases by 6%, the taxable income will increase by $1.15 \times 6 = 6.9\%$ and it may be verified as follows:

EBIT (after 6% increase)	Rs. 42,400
Less Interest	5,000
Profit before Tax	37,400

Increase in taxable income is Rs. 2,400 i.e 6.9% of Rs. 35,000

(ii) Degree of Operating Leverage:

OL = Contribution / EBIT = 1,40,000/40,000 = 3.50

If sale increases by 10%, the EBIT will increase by $3.50 \times 10 = 35\%$ and it may be verified as follows:

Sales (after 10% increase)	Rs. 2,20,000
Less variable expenses @ 30%	66,000
Contribution	1,54,000
Less Fixed cost	1,00,000

Increase in EBIT is Rs. 14,000 i.e 35% of Rs. 40,000

(iii) Degree of Combined leverage

CL = Contribution / Profit before tax = 1,40,000/35,000 = 4

If sales increases by 6%, the profit before tax will increase by 4x6=24% and it maybe verified as follows:

Sales (after 6% increase)	Rs. 2,12,000
Less Variable expenses@ 30%	63,600
Contribution	1,48,400
Less Fixed cost	1,00,000
EBIT	48,400
Less Interest	5,000
Profit before tax	43,400
Increase in Profit before tax is Rs. 8,400 i.e 24% of Rs. 35,00	00

11.5 DIFFERENCE BETWEEN OPERATING LEVERAGE AND FINANCIAL LEVERAGE

Sl.	Operating leverage	Financial leverage
No		
1	Operating leverage is associated with	Financial leverage is associated with
	investment activities of the company.	financing activities of the company.
2	Operating leverage consists of fixed operating	Financial leverage consists of
	expenses of the company.	operating profit of the company.
3	It represents the ability to use fixed operating	It represents the relationship
	cost.	between EBIT
		and EPS
4	Operating leverage can be calculated by	Financial leverage can be calculated
		by
5	A percentage change in the profits resulting	A percentage change in taxable
	from a percentage change in the sales is called	profit is the result of percentage
	as degree of operating leverage.	change in EBIT.
6	Trading on equity is not possible while the	Trading on equity is possible only
	company is operating leverage.	when the company uses financial
		leverage
7	Operating leverage depends upon fixed cost	Financial leverage depends upon the
	and variable cost.	operating profits.
8	Tax rate and interest rate will not affect the	Financial leverage will change due
	operating leverage.	to tax rate and interest rate.

11.6 WORKING CAPITAL LEVERAGE

One of the new models of leverage is working capital leverage which is used to locate the investment in working capital or current assets in the company. Working capital leverage measures the sensitivity of return in investment of charges in the level of current assets.

Working Capital Leverage = Percentage change in ROI Percentage change in Working Capital

If the earnings are not affected by the changes in current assets, the working capital leverage can be calculated with the help of the following formula.

Working Capital Leverage = $\frac{CA}{TA + DCA}$

where, CA = Current Assets, TA = Total Assets, DCA = Changes in the level of Current Assets.

11.7 EFFECTS OF LEVERAGE ON SHAREHOLDERS' RETURNS

Financial plan is one of the vital decisions of a firm because a financial plan affects the market value, cost of capital and shareholders return of a firm. The Proportion of Debt to Equity in the financial plan of a firm is called leverage. Since optimal debt ratio influences a firm's market value and shareholder's return, different firms use different debt ratio at different levels to maximize market value and shareholders return. Leverage has statistically significant effect on the shareholders' return and proper management of leverage can maximize the value of EPS.

1. Operating leverage effect : % Change in EBIT is more than % Change in sale If % change of earning before interest and tax is more than % change in sale, this operating leverage will effect ROE positively because at this level, per unit fixed cost will decrease and small increase in sale will boost EBIT. If EBIT will increase, ROE will also increase. Operating Leverage indicates, how will EBIT change if sales changes. 2:1 ratio of operating leverage means 100% increase in sales will increase EBIT by 200%. As interest is fixed cost, so ROE will increase.

- A. Situation: High operating leverage: Too high operating leverage is not good, it may be highly risky.
- **B.** Situation: Low operating leverage: Low operating leverage may be useful when sale market is fluctuating.

2. Operating leverage effect : % Change in EBIT is less than % Change in sale Now we see the second face when % changes of EBIT is less than % changes in sales, it means 200% increase in sales will increase EBIT by only 100% if operating leverage is 1:2. This situation is less effective for enhancing ROE.

3. Effect of financial leverage on ROE : If we have to check real effect of leverage on ROE, we have to study financial leverage. Financial leverage refers to the use of debt to acquire additional assets. Financial leverage may decrease or increase return on equity in different conditions.

- **A. Situation: High financial leverage:** Financial over-leveraging means incurring a huge debt by borrowing funds at a lower rate of interest and utilizing the excess funds in high risk investments in order to maximize returns.
- **B.** Situation: Low financial leverage: Financial low-leveraging means incurring a low debt by borrowing funds. It may affect positively, if decrease the value of bought asset with this low debt.

11.8 RISKAND LEVERAGE

Risk is the probability that the future revenue streams of a firm shall show a variation from the expected figures. The variation is normally on the negative or the lower side because a positive variation reduces the investment risk and a reduction of risk is always welcome. For linkage with leverage, we can divide risk into two broad categories, i.e. business risk and financial risk. Business risk pertains to risks associated with day to day operations of the firm. For example, decisions made regarding purchase of raw materials, manufacturing expenses and administrative expenses, etc. change the business risk profile of the firm. These decisions have an impact upon the operational profitability of the firm, i.e. the profits before interest and taxes. Financial risk, on the other hand, is associated with introduction of fixed interest bearing debt obligations in the capital structure of the firm. These obligations create a prior charge on EBIT before distribution of post tax profits among the owners.

11.9 RELATIONSHIP BETWEEN FINANCIAL RISK AND FINANCIAL LEVERAGE

As the financial leverage increases, the breakeven point of the company increases and the company now has to sell more of its product (or service) in order to break even. High financial leverage increases the risk to banks and other lenders because of the higher probability of bankruptcy and the risk to stockholders because greater losses may be incurred if the company goes bankrupt. Increase in financial leverage, increases the risk to stockholders because the higher leverage will cause greater volatility in earnings and greater volatility in the stock price.

11.10 SUMMARY

Capital Structure of a firm is a reflection of the overall investment and financing strategy of the firm. It shows how much reliance is being placed by the firm on external sources of finance and how much internal accruals are being used to finance expansions. Optimal capital structure means arrangement of various components of the structure in tune with both the long-term and short term objectives of the firm. The four Capital Structure Theories are—Net Income Approach, Net Operating Income Approach, Traditional Approach and Modigliani Miller Approach. – Net income approach provides that the cost of debt capital, Kd and the cost of equity capital Ke remains unchanged when the degree of leverage, varies. -Net Operating Income approach states that cost of the capital for the whole firm remains constant, irrespective of the leverage employed in the firm. Traditional Approach to capital structure advocates that there is a right combination of equity and debt in capital structure, at which market value of the firms is maximum. – Modigliani and Miller have restated the net operating income position in terms of three basic propositions: Proposition I – The total value of a firm is equal to its expected operating income divided by the discount rate appropriate to its risk class. Proposition II – The expected yield on equity, Ke is equal to Ko plus a premium. Proposition III - The cut off rate for investment decision making for a firm in a given risk class is not affected by the manner in which the investment is financed.

11.11 GLOSSARY

- **Operating leverage:** It increases as the ratio of fixed costs to variable costs increases.
- Variable cost: Costs that change with the level of production.
- Breakeven point: The level of sales where a company's revenues equal its cost. Profit is zero at this point.

11.12 SELFASSESSMENT QUESTIONS

1. Distinguish between operating leverage and financial leverage.

2. Explain the concept of financial leverage.

3. Examine the impact of financial leverage on the EPS. Does the financial Leverage always increases the EPS?

4. How operating leverage and financial leverage can be measured?

11.13 LESSON END EXERCISE

1. Is there any relationship between risk and leverage? Explain.

2. Define working capital leverage.

11.14 SUGGESTED READINGS

- I.M.Pandey, Financial Management, Vikas Publisher.
- M.Y.Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

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## LEVERAGES AND CAPITAL STRUCTURE

#### **UNIT-III**

Lesson No. 12

# CONCEPT AND ASSUMPTIONS OF CAPITAL STRUCTURE

#### STRUCTURE

- 12.1 Introduction
- 12.2 Objectives
- 12.3 Concept and types of capital structure
- 12.4 Significance of capital structure
- 12.5 Capital structure v/s financial structure
- 12.6 Attributes of a well planned capital structure
- 12.7 Assumptions of capital structure
- 12.8 Summary
- 12.9 Glossary
- 12.10 Self Assessment Questions
- 12.11 Lesson end exercise
- 12.12 Suggested readings

## **12.1 INTRODUCTION**

Given the Capital Budgeting decision of a firm, it has to decide the way in which the capital projects will be financed. Every time the firm makes an Investment decision, it has to undertake a financing decision also. For example, a decision to purchase a new machinery or plant implies specific ways of financing that project. Should the firm employ equity or debt or both? What may be its implications/ What is the appropriate mix of debt and equity? These are some questions that a firm needs to answer before taking up any Financing decision.

## **12.2 OBJECTIVES**

After studying this lesson, you will be able to:

- explain the types of capital structure
- identify the attributes of well planned capital structure
- explain significance and assumptions of capital structure

## **12.3 CONCEPT AND TYPES OF CAPITAL STRUCTURE**

Capital structure means the structure or constitution or break-up of the capital employed by a firm. The capital employed consists of both the owners' capital and the debt capital provided by the lenders. Debt capital is understood here to mean the long term debt which has been deployed to build long term assets. Apart from the elements of equity and debt in the capital structure, a firm could have quasi equity in the form of convertible debt. The Financing or Capital Structure decision is a significant managerial decision as it influences the shareholder's return and risk. Consequently the market value of the share may be affected by the capital structure decision.

**Definition of Capital Structure :** The following definitions clearly initiate, the meaning and objective of the capital structure.

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

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

#### **Types of Capital Structre**

Capital Structure of a firm is a reflection of the overall investment and financing strategy of the firm. It shows how much reliance is being placed by the firm on external sources of finance and how much internal accruals are being used to finance expansions etc. Capital structure can be of various kinds as described below:

1. Horizontal Capital Structure In a Horizontal capital structure, the firm has zero debt components in the structure mix. The structure is quite stable. Expansion of the firm takes in a lateral manner, i.e. through equity or retained earning only. The absence of debt results in the lack of financial leverage. Probability of disturbance of the structure is remote.

2. Vertical Capital Structure In a vertical capital structure, the base of the structure is formed by a small amount of equity share capital. This base serves as the foundation on which the super structure of preference share capital and debt is built. The incremental addition in the capital structure is almost entirely in the form of debt. Quantum of retained earnings is low and the dividend pay-out ratio is quite high. In such a structure, the cost of equity capital is usually higher than the cost of debt. The high component of debt in the capital structure increases the financial risk of the firm and renders the structure unstable. The firm, because of the relatively lesser component of equity capital, is vulnerable to hostile takeovers.

**3. Pyramid shaped Capital structure** A pyramid shaped capital structure has a large proportion consisting of equity capital and retained earnings which have been ploughed back into the firm over a considerably large period of time. The cost of share capital and the retained earnings of the firm is usually lower than the cost of debt. This structure is indicative of risk averse conservative firms.

4. Inverted Pyramid shaped Capital Structure Such a capital structure has a small component of equity capital, reasonable level of retained earnings but an ever increasing component of debt. All the increases in the capital structure in the recent past have been made through debt only. Chances are that the retained earnings of the firm are shrinking due to accumulating losses. Such a capital structure is highly vulnerable to collapse.

## **12.4 SIGNIFICANCE OF CAPITAL STRUCTURE**

Capital structure is significant for a firm because the long term profitability and solvency of the firm is sustained by an optimal capital structure consisting of an appropriate mix of debt and equity. The capital structure also is significant for the overall ranking of the firm in the industry group. The significance of the capital structure is discussed below:

1. It reflects the firm's strategy The capital structure reflects the overall strategy of the firm. The strategy includes the pace of growth of the firm. In case the firm wants to grow at a faster pace, it would be required to incorporate debt in its capital structure to a greater extent. Further, in case of growth through acquisitions or the inorganic mode of growth as it is called, the firm would find that financial leverage is an important tool in funding the acquisitions.

2. It is an indicator of the risk profile of the firm One can get a reasonably accurate broad idea about the risk profile of the firm from its capital structure. If the debt component in the capital structure is predominant, the fixed interest cost of the firm increases thereby increasing its risk. If the firm has no long term debt in its capital structure, it means that either it is risk averse or it has cost of equity capital or cost of retained earnings less than the cost of debt.

**3.** It acts as a tax management tool The capital structure acts as a tax management tool also. Since the interest on borrowings is tax deductible, a firm having healthy growth in operating profits would find it worthwhile to incorporate debt in the capital structure in a greater measure.

4. It helps to brighten the image of the firm A firm can build on the retained earnings component of the capital structure by issuing equity capital at a premium to a spread out base of small investors. Such an act has two benefits. On the one hand, it helps the firm to improve its image in the eyes of the investors. At the same time, it reduces chances of hostile take-over of the firm.

## **12.5 CAPITAL STRUCTURE V/S FINANCIAL STRUCTURE**

In engineering, structure refers to different parts of a building and thus in financial terms, financial structure refers to all the components of finance in an organization. In simple terms, financial structure consists of all assets, all liabilities and the capital. The manner in which an organization's assets are financed is referred to as its financial structure. There are some similarities between capital structure and financial structure. However, there are many differences also. If you take a look at the balance sheet of a company, the entire left hand side which includes liabilities plus equity is called the financial structure of the company. It contains all the long term and short term sources of capital. On the other hand, capital structure is the sum total of all long term sources of capital and thus is a part of the financial structure. It includes debentures, long term debt, preference share capital, equity share capital and retained earnings. In the simplest of terms, capital structure of a company is that part of financial structure that reflects long term sources of capital. We can also say that that the total financial structure minus the current liabilities structure gives us the capital structure. We can enunciate the following differences between financial structure and capital structure:

- Capital structure relates to long term capital deployment for creation of long term assets. Financial structure involves creation of both long term and short term assets.
- Capital structure is the core element of the financial structure. Capital structure can exist without the current liabilities and in such cases. Capital structure shall be equal to the financial structure. But we cannot have a situation where the firm has only current liabilities and no long term capital.
- The financial structure of a firm is considered to be a balanced one if the amount of current liabilities is less than the capital structure net of outside debt because in such cases the long term capital is considered sufficient to pay current liabilities in case of sudden loss of current assets.

Components of the capital structure may be used to build up the level of current assets but the current liabilities should not be used to finance acquisition of fixed assets. This would result in an asset liability mismatch.

## 12.6 ATTRIBUTES OF A WELL PLANNED CAPITAL STRUCTURE

A sound or appropriate capital structure should have the following features:

- **a. Return**: The capital structure of the company should be most advantageous. Subject to other considerations, it should generate maximum returns to the shareholders without adding additional cost to them.
- **b. Risk**: The use of excessive debt threatens the solvency of the company. To the point debt does not add significant risk. It should be sued, otherwise its use should be avoided.
- c. Flexibility: The capital structure should be flexible. It should be possible for a company to adapt its capital structure with a minimum cost and delay if warranted by a changed situation. It should also be possible for the company to provide funds whenever needed to finance its profitable activities.
- **d. Capacity**: The capital structure should be determined within the debt capacity of the company and this capacity should not be exceeded. The debt capacity of a company depends on its ability to generate future cash flows. It should have enough cash to pay creditors' fixed charges and principal sum.
- e. Control: The capital structure should involve minimum risk of loss of control of the company. The owners of closely-held companies are particularly concerned about dilution of control.

## **12.7 ASSUMPTIONS OF CAPITAL STRUCTURE**

To examine the relationship between capital structure and cost of capital (or firm value) the following simplifying assumptions are commonly made:

• There is no income tax, corporate or personal.
- The firm pursues a policy of paying all of its earnings as dividends. Put differently a 100 percent dividend payout ratio is assumed.
- Investors have identical subjective probability distributions of operating income (earnings before income and taxes) for each company.
- The operating income is not expected to grow or decline over time.
- A firm can change its capital structure almost instantaneously without incurring transaction costs.

The rationale for the above assumptions is to abstract away the influence of taxation, dividend policy, varying perceptions about risk, growth, and market imperfections so that the influence of financial leverage on cost of capital can be studied with greater clarity. Given the above assumptions, the analysis focuses on the following rates:

$$r_A = r_D \left[ \frac{D}{D+E} \right] + r_E \left[ \frac{E}{D+E} \right]$$

In terms of the above definitions, the question of interest to us is: What happens to  $r_D$ ,  $r_E$ , and  $r_A$  when financial leverage, D/E, changes? The important answers to these questions are discussed in the following sections.

#### **12.8 SUMMARY**

Capital Structure of a firm is a reflection of the overall investment and financing strategy of the firm. It shows how much reliance is being placed by the firm on external sources of finance and how much internal accruals are being used to finance expansions. - Optimal capital structure means arrangement of various components of the structure in tune with both the long-term and short term objectives of the firm. – The four Capital Structure Theories are-Net Income Approach, Net Operating Income Approach, Traditional Approach and Modigliani Miller Approach. - Net income approach provides that the cost of debt capital, Kd and the cost of equity capital Ke remains unchanged when the degree of leverage, varies. - Net Operating Income approach states that cost of the capital for the whole firm remains constant, irrespective of the leverage employed in the firm. – Traditional Approach to capital structure advocates that there is a right combination of equity and debt in capital structure, at which market value of the firms is maximum. - Modigliani and Miller have restated the net operating income position in terms of three basic propositions: Proposition I – The total value of a firm is equal to its expected operating income divided by the discount rate appropriate to its risk class. Proposition II – The expected yield on equity, Ke is equal to Ko plus a premium. Proposition III – The cut off rate for investment decision making for a firm in a given risk class is not affected by the manner in which the investment is financed.

## **12.9 GLOSSARY**

- **Bonds** : are debt instruments involving two parties- the borrower and the lender.
- **Term loans:** are borrowings made from banks and financial institutions. Such term loans may be for the medium to long term with repayment period ranging from 1 to 30 years.
- **Long Term Finance**: The funds which are not paid back within a period of less than a year are referred to as long term finance.

- **Stock:** The stock (or capital stock) of an incorporated business constitutes the equity stake of its owners. It represents the residual assets of the company that would be due to stockholders after discharge of all senior claims such as secured and unsecured debt. Stockholders' equity cannot be withdrawn from the company in a way that is intended to be detrimental to the company's creditors.
- **Derivatives:** A derivative is a financial instrument which derives its value from the value of underlying entities such as an asset, index, or interest rate. A derivative is a financial contract whose value is derived from the performance of underlying market factors, such as interest rates, currency exchange rates, and commodity, credit, and equity prices.

## **12.10 SELF ASSESSMENT QUESTIONS**

1. What is the significance of capital structure? Describe its various kinds.

2. What points need to be kept in mind while deciding the capital structure of a firm?

3. Describe the process of planning and designing of capital structure.

## **12.11 LESSON END EXERCISE**

1. Explain the various assumptions of capital structute.

2. Compare and contrast the capital structure and financial structure.

## **12.12 SUGGESTED READINGS**

- I.M. Pandey, Financial Management, Vikas Publisher.
- M.Y. Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

## LEVERAGES AND CAPITAL STRUCTURE

#### UNIT-III

Lesson No. 13

## CAPITAL STRUCTURE APPROACHES AND DESIGNING CAPITAL STURCTURE

#### STRUCTURE

- 13.1 Introduction
- 13.2 Objectives
- 13.3 Approaches to Capital Structure Net Income Approach
- 13.4 Designing Capital Structure
- 13.5 Summary
- 13.6 Glossary
- 13.7 Self Assessment Questions
- 13.8 Lesson End Exercise
- 13.9 Suggested Readings.

## **13.1 INTRODUCTION**

The capital structure is made up of debt and equity securities and refers to permanent financing of a firm. It is composed of long time debt, primarly sharehoder's capital and shareholders funds.

Capital structure can effect the value of company by affecting either its expected earnings or the cost of capital or both. The capital structure decision can influence the value of the ffirm throught the earnings available to the shareholders. But the leverage can largely influence the value of firm throught cost of capital. In exploring the relationship between leverage and value of firm, the relationship between leverage and cost of capital firm the stand point of valuation.

#### **13.2 OBJECTIVES**

After going through this chapter students will able to understand:

- Approaches to Capital Structure
- Designing Capital Structure

# 13.3 APPROACHES TO CAPITAL STRUCTURE - NET INCOME (NI) APPROACH

The capital structure decision can affect the value of the firm either by changing the expected earnings or the cost of capital or both. The objective of the firm should be directed towards the maximization of the value of the firm the capital structure, or average, decision should be examined from the point of view of its impact on the value of the firm. If the value of the firm can be affected by capital structure or financing decision a firm would like to have a capital structure which maximizes the market value of the firm. The capital structure decision can affect the value of the firm either by changing the expected earnings or the cost of capital or both. If average affects the cost of capital and the value of the firm, an optimum capital structure would be obtained at that combination of debt and equity that maximizes the total value of the firm (value of shares plus value of debt) or minimizes the weighted average cost of capital. For a better understanding of the relationship between financial average and the value of the firm, assumptions, features and implications of the capital structure theories are given below.

#### **Assumptions:**

In order to grasp the capital structure and the cost of capital controversy property, the following assumptions are made:

- a) Firms employ only two types of capital: debt and equity.
- b) The total assets of the firm are given. The degree of average can be changed by selling debt to purchase shares or selling shares to retire debt.
- c) The firm has a policy of paying 100 per cent dividends.
- d) The operating earnings of the firm are not expected to grow.
- e) The business risk is assumed to be constant and independent of capital structure and financial risk.
- f) The corporate income taxes do not exist. This assumption is relaxed later on.

The following are the basic definitions:

The above assumptions and definitions described above are valid under any of the capital structure theories. David Durand views, Traditional view and MM Hypothesis are the important theories on capital structure.

**Net Income (NI) Approach** - The existence of an optimum capital structure is not accepted by all. There exist two extreme views and a middle position. **David Durand** identified the two extreme views namely, the Net income and net operating approaches.

According to NI approach a firm may increase the total value of the firm by lowering its cost of capital. When cost of capital is lowest and the value of the firm is greatest, we call it the optimum capital structure for the firm and, at this point, the market price per share is maximised. The same is possible continuously by lowering its cost of capital by the use of debt capital. In other words, using more debt capital with a corresponding reduction in cost of capital, the value of the firm will increase. The same is possible only when:

- (i) Cost of Debt  $(K_d)$  is less than Cost of Equity  $(K_e)$ ;
- (ii) There are no taxes; and
- (iii) The use of debt does not change the risk perception of the investors since the degree of leverage is increased to that extent.

Since the amount of debt in the capital structure increases, weighted average cost of capital decreases which leads to increase the total value of the firm. So, the increased amount of debt with constant amount of cost of equity and cost of debt will highlight the earnings of the shareholders.

#### **Illustration 13.1**

#### X Ltd. presents the following particulars:

EBIT (i.e., Net Operating income) is Rs. 30,000;

The equity capitalisation ratio (i.e., cost of equity) is 15% (K);

Cost of debt is 10% ( $K_d$ );

Total Capital amounted to Rs. 2,00,000.

Calculate the cost of capital and the value of the firm for each of the following alternative leverage after applying the NI approach.

Leverage (Debt to total Capital) 0%, 20%, 50%, 70% and 100%.

From the above table it is quite clear that the value of the firm (V) will be increased if there is a proportionate increase in debt capital but there will be a reduction in overall cost of capital. So, Cost of Capital is increased and the value of the firm is maximum if a firm uses 100% debt capital.

It is interesting to note the NI approach can also be graphically presented as under (with the help of the above illustration):

The degree of leverage is plotted along the X-axis whereas  $K_e$ ,  $K_w$  and  $K_d$  are on the Y-axis. It reveals that when the cheaper debt capital in the capital structure is proportionately increased, the weighted average cost of capital,  $K_w$ , decreases and consequently the cost of debt is  $K_d$ .

Thus, it is needless to say that the optimal capital structure is the minimum cost of capital if financial leverage is one; in other words, the maximum application of debt capital.

The value of the firm (V) will also be the maximum at this point.

Thus, under the net income (Nl) approach, the cost of debt and cost of equity are assumed to be independent of the capital structure. The weighted average cost of capital declines and the total value of the firm rise with increased use of average.

Weighted Average Cost of Capital (WACC) is the weighted average costs of equity and debts where the weights are the amount of capital raised from each source.

WACC = \_\_\_\_\_\_\_ Total amount of capital (debt and equity)

According to Net Income Approach, change in the financial leverage of a firm will lead to corresponding change in the Weighted Average Cost of Capital (WACC) and also the value of the company. The Net Income Approach suggests that with the increase in leverage (proportion of debt), the WACC decreases and the value of a firm increases. On the other hand, if there is a decrease in the leverage, the WACC increases and thereby the value of the firm decreases.

For example, vis-à-vis equity-debt mix of 50:50, if the equity-debt mix changes to 20: 80, it would have a positive impact on value of the business and thereby increase the value per share.

#### **Assumptions of Net Income Approach**

Net Income Approach makes certain assumptions which are as follows :

• Increase in debt will not affect the confidence levels of the investors.

- The cost of debt is less than cost of equity.
- There are no taxes levied.

## **13.4 DESIGNING CAPITAL STRUCTURE**

Capital structure theory emphasise on the balance between debt and equity. Due to tax debt is considered a cheaper method of capitalisation than equity however if a company leverages excessively it increases risks of financial distress.

Companies use a more practical approach in designing a capital mix by considering at the cost of capital, alignment of capital structure with strategy, flexibility to respond to rapidly changing market conditions and focus on liquidity to minimise reliance on external financing.

Leading companies manage capital structure effectively to take advantage of opportunities, manage risk and meet the changing needs of the business. The following are some of the best practices used by companies in designing capital structure:

1. **Appropriate selection of instrument :-** There is no one single source or a combination of sources of capital is appropriate for a company. Leading companies evaluate available funding options, pros and cons of debt and equity and cost of capital in order to understand the financial, regulatory and operational risks they are likely to face. Each company will take the options that best fit it with the confidence that it has flexibility to handle a drastic change in the business.

2. Align capital structure with company strategy:- Best practice companies develop a capital mix that supports the company strategy leaving room for flexibility to be able to respond to changing business environment.

By determining an appropriate credit risk threshold and putting in place a disciplined private equity management tactics, effective companies create a capital structure that supports organisational objectives and operational excellence.

**3.** Establish the company's cost of capital :- Leading companies keep awareness of their cost of capital to accurately determine threshold of capital

investment. The most popular method to compute cost of capital is getting a company's weighted average cost of capital (WACC).

WACC formula is straight forward but can be complicated by fluctuating input that determines its outcome. Leading companies regularly keep measuring its cost of capital to keep a close tab where its losing or gaining value.

The companies that use various different methods of computing WACC get a more comprehensive understanding of their position and enable them to make better strategic decisions to deal with the industry and its competitors.

#### 4. Ensure reduced cost of capital on an ongoing basis :-

Leading companies strive to make efforts to reduce cost of capital. While ways of reducing cost of capital may not be specific their cumulative effects may help a company reduce cost of capital through strategy as opposed to just cutting capital cost.

Best practice companies exercise financial transparency to attract investors who offer their capital at lower cost than competitors.

They keep good relationship with banks to enjoy favorable lending rates which in turn has a positive impact on the profitability.

**5.** Manage flexible capital :- Best practice companies are proactive in balancing debt to equity ratio to be able to respond to internal and external factors that affect cost of capital. Flexible financial policies that affect dividends where lower amounts can be paid as dividend and the rest retained to grow the business are useful to many companies.

6. Exploring new finance sources continuously :- Best practice companies move from reliance on traditional sources of capital like commercial banks, public debt, equity markets or institutional investors to avoid being victims of the changes in the market by continuously searching for alternative non traditional sources of capital on a continuous basis.

They partner with other business, use assets as collateral and creating corporate structures to insulate the parent company from excessive risks.

## **13.5SUMMARY**

Capital structure of a business is the mix of types of debt and equity the company has on its balance sheet. The capital or ownership of a business can be evaluated by knowing how much of the ownership is in debt and how much in equity. The company's debt might include both short-term debt and long-term debt (such as mortgages), and equity, including common stock, preferred shares and retained earnings.

## 13.6 GLOSSARY

**Net Income Approach :-** The ratio of less expensive source of funds (i.e debt) increase in the capital structure, the ro decreases and V of the firm increases, where

Ro: Cost of capital

V : Value of Firm financial risk of equity holders.

## **13.7 SELFASSESSMENT QUESTIONS**

Q1. Explain net income approach

Q2. Explain weighted average cost of capital.

## **13.8 LESSON END EXERCISE**

Q1. Explain the designing of capital structure.

Q2. Write assumption of net income approach.

## **13.9 SUGGESTED READINGS**

Fundamental of Financial Management
 Fundamental of Financial Management
 Fundamental of Financial Management
 Joel F. Houston
 Financial Management
 P K Jain
 M Y Khan

### LEVERAGES AND CAPITAL STRUCTURE

### UNIT-III

Lesson No. 14

## APPROACHES OF CAPITAL STRUCTURE-NET OPERATING INCOME APPROACH; TRADITIONAL APPROACH; MM APPROACH

#### **STRUCTURE**

- 14.1 Introduction
- 14.2 Objectives
- 14.3 Meaning of optimal capital structure
- 14.4 Features of capital structure
- 14.5 Net operating income approach
- 14.6 Traditional Theory
- 14.7 Modigliani-Millar Approach
- 14.8 Summary
- 14.9 Glossary
- 14.10 Self assessment questions
- 14.11 Lesson end exercise
- 14.12 Suggested readings

#### **14.1 INTRODUCTION**

Capital structure decision is a significant decision in financial management. This decision in a private enterprise is directed towards the achievement of maximization of the shareholders' wealth or value of the firm. A firm funds its operation with capital raised from varied sources. A mix of these various sources is generally referred to as capital structure (CS). The capital structure has been defined as "that combination of debt and equity that attains the stated managerial goals (i.e.) the maximization of the firm's market value". The optimal capital structure is also defined as that "combination of debt and equity that minimizes the firm's overall cost of capital". The firm's balance sheet constitutes different proposition of debt instruments, preferred and common stock, which represents the capital structure of the firm. The value of an enterprise depends on expected earnings and cost of capital. Capital structure influences the value of the firm by operating on either expected earnings or the cost of capital or both. Due to tax deductability of interest payments, recourse to debt financing generally reduces the firm's tax liability, but increases the financial risk. The management, therefore, has to choose that pattern of capital structure in which the level of debt minimizes the overall cost of capital, maximizes earnings available to owners and thus maximizes the total value of the firm. Hence there exists a relation between capital structure and cost of capital.

## **14.2 OBJECTIVES**

After studying this lesson, you will be able to:

- explain the meaning of optimum capital structure;
- identify the various factors affecting optimum capital structure;
- understand the feat2ures of optimum capital structure
- compare the various theories of optimum capital structure

### **14.3 MEANING OF OPTIMAL CAPITAL STRUCTURE**

It is not an easy task to ascertain the optimum capital structure of a firm because maximisation of shareholder's wealth depends on some basic decisions. In order to maximise the value of the equity shares, the firm must choose a financing mix-capital structure which will assist in achieving the desired objectives. Thus, the capital structure must be tested from the point of view of its effect towards the value of the enterprise. It is needless to mention that a firm must choose its financing mix in such a manner that it maximises the shareholder's fund if the capital structure of the firm affects the total value of the enterprise. Thus, an optimal capital structure has such a proportion of debt and equity which will maximise the wealth of the firm. At this capital structure, the market price per share is maximum and cost of capital is minimum.

**E. F. Brigham defines**—"the optimum capital structure strikes that balance between risk and return which maximises the price of the stock and simultaneously minimizes the firm's overall cost of capital."

Thus, a sound optimum capital structure is one which: (i) Maximises the worth or value of the firm, (ii) Minimizes the cost of capital, (iii) Maximises the benefit to the shareholders by giving best earning per share and maximum market price of the shares in the long-run, and (iv) Is fair to employees, creditors and others.

The following illustration will help us to understand the principle clearly:

**Illustration:** 

Thus, the rate of earning on shareholders' fund is 22.5%, although the rate of return is 20%. From the above example it becomes quite clear that the firm will be interested to use more debt capital. But we know that too much use of debt capital is a risky situation as, ultimately, it increases cost. At the same time a dangerous situation may arise if the firm is not able to earn more rate of return than it pays for. Thus, debt capital financing should be used very carefully. That is why, there must be a proper financing mix between debt and equity capitals to attain the optimum situation.

## **14.4 FEATURES OF AN OPTIMUM CAPITAL STRUCTURE**

The various features of an optimum capital structure are discussed below:

- **1. Simplicity:** All businessmen are not educated. A complicated capital structure may not be understood by all; on the contrary it may raise suspicions and create confusion. A capital structure must be as simple as possible.
- 2. **Profitability:** An optimum capital structure is one which maximises earning per equity share and minimizes cost of financing.
- **3. Solvency:** In a sound capital structure, content of debt will be a reasonable proportion of the total capital employed in the business. As a result, it has minimum risk of becoming insolvent.
- 4. Flexibility: The capital structure of a firm should be such that it can raise funds as when required.
- 5. Conservatism: The debt content in the capital structure of a firm should be within its borrowing limits. It should be free from the risk of insolvency.
- 6. Control: The capital structure should be designed in a such a way that it involves minimum risk of loss of control of the firm.
- 7. Optimal debt-equity mix: Optimal debt-equity mix in the capital structure of a company would be that point where the weighted average cost of capital is minimum. Optimum debt- equity proportion

establishes balance between owned capital and debt capital. The firm should be cautious about the financial risk associated with the maximum utilisation of debt.

8. Maximisation of the value of the firm: An optimum capital structure makes the value of the firm maximum.

## **14.5 NET OPERATING INCOME (NOI) APPROACH)**

Net Operating Income (NOI) Approach, advocated by David Durand, is based on certain assumptions. They are:

- (i) The overall capitalisation rate of the firm  $K_w$  is constant for all degree of leverages;
- (ii) Net operating income is capitalised at an overall capitalisation rate in order to have the total market value of the firm.

Thus, the value of the firm, V, is ascertained at overall cost of capital  $(K_w)$ :

 $V = EBIT/K_{w}$  (since both are constant and independent of leverage)

(iii) The market value of the debt is then subtracted from the total market value in order to get the market value of equity.

 $\mathbf{S}-\mathbf{V}-\mathbf{T}$ 

(iv) As the Cost of Debt is constant, the cost of equity will be

 $K_{e} = EBIT - I/S$ 

The NOI Approach can be illustrated with the help of the following diagram:



Fig 14.1: Behaviours of Ke, Kw and Kd under Net Operating Income Approach

Under this approach, the most significant assumption is that the  $K_w$  is constant irrespective of the degree of leverage. The segregation of debt and equity is not important here and the market capitalises the value of the firm as a whole.

Thus, an increase in the use of apparently cheaper debt funds is offset exactly by the corresponding increase in the equity- capitalisation rate. So, the weighted average Cost of Capital  $K_w$  and  $K_d$  remain unchanged for all degrees of leverage. Needless to mention here that, as the firm increases its degree of leverage, it becomes more risky proposition and investors are to make some sacrifice by having a low P/E ratio.

#### **Illustration 14.1:**

#### Assume:

Net Operating Income or EBIT Rs. 30,000 Total Value of Capital Structure Rs. 2,00,000. Cost of Debt Capital K<sub>d</sub> 10%

Average Cost of Capital  $K_{w}$  12%

Calculate Cost of Equity, K<sub>e</sub>: value of the firm V applying NOI approach under each of the following alternative leverages:

Leverage (debt to total capital) 0%, 20%, 50%, 70%, and 100%

Although the value of the firm, Rs. 2,50,000 is constant at all levels, the cost of equity is increased with the corresponding increase in leverage. Thus, if the cheaper debt capital is used, that will be offset by the increase in the total cost of equity  $K_e$ , and, as such, both  $K_e$  and  $K_d$  remain unchanged for all degrees of leverage, i.e. if cheaper debt capital is propor-tionately increased and used, the same will offset the increase of cost of equity.

Thus, under the net operating income (NOI) approach, the cost of equity is assumed to increase linearly with average. As a result, the weighted average cost of capital remains constant and the total of the firm also remains constant as average changed. If the Nl approach is valid, average is a significant variable and financing decisions have an important effect on the value of the firm, on the other hand, if the NOI approach is correct, then the financing decision should not be of greater concern to the financial manager, as it does not matter in the valuation of the firm.

## 14.7 TRADITIONAL VIEW/ TRADITIONAL THEORY APPROACH

It is accepted by all that the judicious use of debt will increase the value of the firm and reduce the cost of capital. So, the optimum capital structure is the point at which the value of the firm is highest and the cost of capital is at its lowest point. Practically, this approach encompasses all the ground between the Net Income Approach and the Net Operating Income Approach, i.e., it may be called Intermediate Approach.

The traditional approach explains that up to a certain point, debt-equity mix will cause the market value of the firm to rise and the cost of capital to decline. But after attaining the optimum level, any additional debt will cause to decrease the market value and to increase the cost of capital.

In other words, after attaining the optimum level, any additional debt taken will offset the use of cheaper debt capital since the average cost of capital will increase along with a corresponding increase in the average cost of debt capital.

#### Thus, the basic proposition of this approach are:

- (a) The cost of debt capital, K<sub>d</sub>, remains constant more or less up to a certain level and thereafter rises.
- (b) The cost of equity capital K<sub>e</sub>, remains constant more or less or rises gradually up to a certain level and thereafter increases rapidly.

(c) The average cost of capital, K<sub>w</sub>, decreases up to a certain level remains unchanged more or less and thereafter rises after attaining a certain level.

According to the traditional position, the manner in which the overall cost of capital reacts to changes in capital structure can be divided into three stages and this can be seen in the following figure 14.2.

Fig 14.2

The traditional approach can graphically be represented under taking the data from the previous illustration:



Fig.14.3: Behaviour of Ke, Kw and Kd under Traditional Approach

It is found from the above that the average cost curve is U-shaped. That is, at this stage the cost of capital would be minimum which is expressed by the letter 'A' in the graph. If we draw a perpendicular to the X-axis, the same will indicate the optimum capital structure for the firm.

Thus, the traditional position implies that the cost of capital is not independent of the capital structure of the firm and that there is an optimal capital structure. At that optimal structure, the marginal real cost of debt (explicit and implicit) is the same as the marginal real cost of equity in equilibrium. For degree of leverage before that point, the marginal real cost of debt is less than that of equity beyond that point the marginal real cost of debt exceeds that of equity.

## **Illustration 14.3:**

| EBIT                                  |       |                                       |       |
|---------------------------------------|-------|---------------------------------------|-------|
| Total Value                           |       | Rs. 30,000                            |       |
| Capital Structure                     |       | Rs. 2,00,000                          |       |
| Cost of Equity                        |       | Cost of Debt                          |       |
| Up to Rs. 1,00,000                    | @ 15% | Up to Rs. 1,00,000                    | @ 10% |
| Between Rs. 1,00,000 and Rs. 1,50,000 | @ 18% | Between Rs. 1,00,000 and Rs. 1,50,000 | @ 12% |
| Between Rs. 1,50,000 and Rs. 2,00,000 | @ 20% | Between Rs. 1,50,000 and Rs. 2,00,000 | @ 15% |

Calculate the cost of capital and the value of the firm under each of the following alternative degrees of leverage and comment on them:

Leverage : 
$$\left(\frac{\text{Debt}}{\text{Total Capital}}\right) = 0\%, 20\%, 50\%, 70\%, 100\%.$$

| Solution :<br>Statement Showing the Cost of Capital and the Value of the Firm                                                                                       |          |          |          |          |          |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------|----------|----------|--|
| Leverage                                                                                                                                                            | 0        | 0.2      | 0.5      | 0.7      | 1.0      |  |
| Given —                                                                                                                                                             |          |          |          |          |          |  |
| K <sub>4</sub>                                                                                                                                                      | 10%      | 10%      | 10%      | 12%      | 15%      |  |
| K,                                                                                                                                                                  | 15%      | 15%      | 15%      | 18%      | 20%      |  |
| $K_{\infty} = \left(\frac{T}{V}\right) K_d + \left(\frac{5}{V}\right) K_s$                                                                                          | 30%*     | 28%      | 25%      | 27.6%    | 30%      |  |
| EBIT                                                                                                                                                                | 30,000   | 30,000   | 30,000   | 30,000   | 30,000   |  |
| ess : Interest on Debt ( $K_d \times T$ )                                                                                                                           | -        | 4,000    | 10,000   | 16,800   | 30,000   |  |
| Earnings to Equity (EBIT - I)                                                                                                                                       | 30,000   | 26,000   | 20,000   | 13,200   | _        |  |
| Amount to Debt (T)                                                                                                                                                  | -        | 40,000   | 1,00,000 | 1,40,000 | 2,00,000 |  |
| Value of Equity $S = \left(\frac{EBIT}{K_r}\right) =$                                                                                                               | 2,00,000 | 1,73,333 | 1,33,333 | 73,333   | -        |  |
| Total Value of the firm (V = T + S)                                                                                                                                 | 2,00,000 | 2,13,333 | 2,33,333 | 2,13,333 | 2,00,000 |  |
| <ul> <li>When financing leverage is 0</li> </ul>                                                                                                                    |          |          |          |          |          |  |
| $\mathbf{K}_{\mathbf{w}} = \left(\frac{\mathbf{T}}{\mathbf{V}}\right) \mathbf{K}_{\mathbf{d}} + \left(\frac{\mathbf{S}}{\mathbf{V}}\right) \mathbf{K}_{\mathbf{e}}$ |          |          |          |          |          |  |
| = .0 × 10 + 2 × 15                                                                                                                                                  |          |          |          |          |          |  |
| = 30%                                                                                                                                                               |          |          |          |          |          |  |
| (ii) When financing leverage is .2                                                                                                                                  |          |          |          |          |          |  |
| = .4 × 10 + .16 × 15 = 28%                                                                                                                                          |          |          |          |          |          |  |
| (iii) When financing leverage is .5                                                                                                                                 |          |          |          |          |          |  |
| $= .10 \times 10 + .10 \times 15 = 25\%$                                                                                                                            |          |          |          |          |          |  |
| (iv) When financing leverage is .7                                                                                                                                  |          |          |          |          |          |  |
| = .14 × 12 + .6 × 18 = 27.6%                                                                                                                                        |          |          |          |          |          |  |
| (v) When financing leverage is 1.0                                                                                                                                  |          |          |          |          |          |  |
| = 2.0 × 15 + 0 × 20 = 30%                                                                                                                                           |          |          |          |          |          |  |

Thus, from the above table, it becomes quite clear the cost of capital is lowest (at 25%) and the value of the firm is the highest (at Rs. 2,33,333) when debt-equity mix is (1,00,000 : 1,00,000 or 1: 1). Hence, optimum capital structure in this case is considered as Equity Capital (Rs. 1,00,000) and Debt Capital (Rs. 1,00,000) which bring the lowest overall cost of capital followed by the highest value of the firm.

#### Variations on the Traditional Theory:

This theory underlines between the Net Income Approach and the Net Operating Income Approach. Thus, there are some distinct variations in this theory. Some followers of the traditional school of thought suggest that  $K_e$  does not practically rise till some critical conditions arise. Only after attaining that level the investors apprehend the increasing financial risk and penalise the market price of the shares. This variation expresses that a firm can have lower cost of capital with the initial use of leverage significantly.

#### This variation in Traditional Approach is depicted as:



Traditional Approach (when K, constant at first)

Other followers e.g., Solomon, are of opinion the  $K_e$  is being saucershaped along with a horizontal middle range. It explains that optimum capital structure has a range where the cost of capital is rather minimised and where the total value of the firm is maximised. Under the circumstances a change in leverage has, practically, no effect on the total firm's value. So, this approach grants some sort of variation in the optimal capital structure for various firms under debt-equity mix.





Thus, this approach very clearly implies that the cost of capital decreases within the reasonable limit of debt and then increases with average. Thus, an optimum capital structure exists and occurs when the cost of capital

is minimum or the value of the firm is maximum. The cost of capital declines with leverage because debt capital is chipper than equity capital within reasonable, or acceptable, limit of debt. The weighted average cost of capital will decrease with the use of debt.

- 1. The traditional view is criticised because it implies that totality of risk incurred by all security-holders of a firm can be altered by changing the way in which this totality of risk is distributed among the various classes of securities.
- 2. Modigliani and Miller also do not agree with the traditional view. They criticise the assumption that the cost of equity remains unaffected by leverage up to some reasonable limit.

#### 14.7 MODIGLIANI-MILLER (M-M) APPROACH

Modigliani-Miller' (MM) advocated that the relationship between the cost of capital, capital structure and the valuation of the firm should be explained by NOI (Net Operating Income Approach) by making an attack on the Traditional Approach.

The Net Operating Income Approach, supplies proper justification for the irrelevance of the capital structure. In Income Approach, supplies proper justification for the irrelevance of the capital structure.

In this context, MM support the NOI approach on the principle that the cost of capital is not dependent on the degree of leverage irrespective of the debt-equity mix. In the words, according to their thesis, the total market value of the firm and the cost of capital are independent of the capital structure.

They advocated that the weighted average cost of capital does not make any change with a proportionate change in debt-equity mix in the total capital structure of the firm. The same can be shown with the help of the following diagram:

#### **Proposition:**

## The following propositions outline the MM argument about the relationship between cost of capital, capital structure and the total value of the firm:

(i) The cost of capital and the total market value of the firm are independent of its capital structure. The cost of capital is equal to the capitalisation rate of equity stream of operating earnings for its class, and the market is determined by capitalising its expected return at an appropriate rate of discount for its risk class.

- (ii) The second proposition includes that the expected yield on a share is equal to the appropriate capitalisation rate of a pure equity stream for that class, together with a premium for financial risk equal to the difference between the pure-equity capitalisation rate  $(K_e)$  and yield on debt  $(K_d)$ . In short, increased  $K_e$  is offset exactly by the use of cheaper debt.
- (iii) The cut-off point for investment is always the capitalisation rate which is completely independent and unaffected by the securities that are invested.

#### **Assumptions:**

#### The MM proposition is based on the following assumptions:

- (a) Existence of Perfect Capital Market: It includes:
  - (i) There is no transaction cost;
  - (ii) Flotation costs are neglected;
  - (iii) No investor can affect the market price of shares;
  - (iv) Information is available to all without cost;
  - (v) Investors are free to purchase and sale securities.

#### (b) Homogeneous risk class/equivalent risk class:

It means that the expected yield/return have the identical risk factor i.e., business risk is equal among all firms having equivalent operational condition.

#### (c) Homogeneous expectation:

All the investors should have identical estimate about the future rate of earnings of each firm.

#### (d) The Dividend pay-out Ratio is 100%:

It means that the firm must distribute all its earnings in the form of dividend among the shareholders/investors, and

#### (e) Taxes do not exist:

That is, there will be no corporate tax effect (although this was removed at a subsequent date).

#### Interpretation of MM Hypothesis:

The MM Hypothesis reveals that if more debt is included in the capital structure of a firm, the same will not increase its value as the benefits of cheaper debt capital are exactly set-off by the corresponding increase in the cost of equity, although debt capital is less expensive than the equity capital. So, according to MM, the total value of a firm is absolutely unaffected by the capital structure (debt-equity mix) when corporate tax is ignored.

#### **Proof of MM Hypothesis—The Arbitrage Mechanism:**

MM have suggested an arbitrage mechanism in order to prove their argument. They argued that if two firms differ only in two points viz. (i) the process of financing, and (ii) their total market value, the shareholders/ investors will dispose-off share of the over-valued firm and will purchase the share of under-valued firms.

Naturally, this process will be going on till both attain the same market value. As such, as soon as the firms will reach the identical position, the average cost of capital and the value of the firm will be equal. So, total value of the firm (V) and Average Cost of Capital,  $(K_w)$  are independent.

#### It can be explained with the help of the following illustration:

Let there be two firms, Firm 'A' and Firm 'B'. They are similar in all respects except in the composition of capital structure. Assume that Firm 'A' is financed only by equity whereas Firm 'B' is financed by a debt-equity mix.

#### The following particulars are presented:

From the table presented above, it is learnt that value of the levered firm 'B' is higher than the unlevered firm 'A'. According to MM, such situation cannot persist long as the investors will dispose-off their holding of firm 'B' and purchase the equity from the firm 'A' with personal leverage. This process will be continued till both the firms have same market value.

# Suppose Ram, an equity shareholder, has 1% equity of firm 'B'. He will do the following:

- (i) At first, he will dispose-off his equity of firm 'B' for Rs. 3,333.
- (ii) He will take a loan of Rs. 2,000 at 5% interest from personal account.
- (iii) He will purchase by having Rs. 5,333 (i.e. Rs. 3,333 + Rs. 2,000)1.007% of equity from the firm 'A'.

#### By this, his net income will be increased as:

| Net Income               | 433 |
|--------------------------|-----|
| Less : Interest @ 5%     | 100 |
| Return from the firm 'A' | 533 |
|                          | KS. |

Obviously, this net income of Rs. 433 is higher than that of the firm 'B' by disposing-off 1% holding.

It is needless to say that when the investors will sell the shares of the firm 'B' and will purchase the shares from the firm 'A' with personal leverage, this market value of the share of firm 'A' will decline and, consequently, the market value of the share of firm 'B' will rise and this will be continued till both of them attain the same market value.

We know that the value of the levered firm cannot be higher than that of the unlevered firm (other things being equal) due to that arbitrage process. We will now highlight the reverse direction of the arbitrage process.

#### Consider the following illustration:

|                                    | Firm 'A' | Firm 'B' |
|------------------------------------|----------|----------|
| Equity Earnings                    | 50,000   | 40,000   |
| Equity Capitalisation Rate         | 8%       | 12%      |
| Market Value of Equity             | 6,00,000 | 3,33,333 |
| Interest on Debt Capital           | 0        | 10,000   |
| Market Value of Debt               | 0        | 2,00,000 |
| Total Market Value (Debt + Equity) | 6,00,000 | 5,33,333 |

In the above circumstances, equity shareholder of the firm 'A' will sell his holdings and by the proceeds he will purchase some equity from the firm 'B' and invest a part of the proceeds in debt of the firm 'B'.

# For instance, an equity shareholder holding 1% equity in the firm 'A' will do the following:

- (i) He will dispose-off his 1% equity of firm 'A' for Rs. 6,250.
- (ii) He will buy  $1\frac{11}{64}$ % of equity and debt of the firm 'B' for the like amount.
- (iii) As a result, he will have an additional income of Rs. 86.

Thus, if the investors prefer such a change, the market value of the equity of the firm 'A' will decline and, consequently, the market value of the shares of the firm 'B' will tend to rise and this process will be continued till both the firms attain the same market value, i.e., the arbitrage process can be said to operate in the opposite direction.

#### Criticisms of the MM Hypothesis:

We have seen (while discussing MM Hypothesis) that MM Hypothesis is based on some assumptions. There are some authorities who do not recognise such assumptions as they are quite unrealistic, viz. the assumption of perfect capital market.

We also know that most significant element in this approach is the arbitrage process forming the behavioural foundation of the MM Hypothesis. As the imperfect market exists, the arbitrage process will be of no use and as such, the discrepancy will arise between the market value of the unlevered and levered firms.

# The shortcomings for which arbitrage process fails to bring the equilibrium condition are:

## (i) Existence of Transaction Cost:

The arbitrage process is affected by the transaction cost. While buying securities, this cost is involved in the form of brokerage or commission etc. for which extra amount is to be paid which increases the cost price of the shares and requires a greater amount although the return is same. As such, the levered firm will enjoy a higher market value than the unlevered firm.

# (ii) Assumption of borrowing and lending by the firms and the individual at the same rate of interest:

The above proposition that the firms and the individuals can borrow or lend at the same rate of interest, does not hold good in reality. Since a firm holds more assets and credit reputation in the open market in comparison with an individual, the former will always enjoy a better position than the latter.

As such, cost of borrowing will be higher in case of an individual than a firm. As a result, the market value of both the firms will not be equal.

#### (iii) Institutional Restriction:

The arbitrage process is retarded by the institutional investors e.g., Life Insurance Corporation of India, Commercial Banks; Unit Trust of India etc., i.e., they do not encourage personal leverage. At present these institutional investors dominate the capital market.

## (iv) "Personal or home-made leverage" is not the prefect substitute for "corporate leverage.":

MM hypothesis assumes that "personal leverage" is a perfect substitute for "corporate leverage" which is not true as we know that a firm may have a limited liability whereas there is unlimited liability in case of individuals. For this purpose, both of them have different footing in the capital market.

#### (v) Incorporation of corporate taxes:

If corporate taxes are considered (which should be taken into consideration) the MM approach will be unable to discuss the relationship between the value of the firm and the financing decision. For example, we know that interest charges are deducted from profit available for dividend, i.e., it is tax deductible.

In other words, the cost of borrowing funds is comparatively less than the contractual rate of interest which allows the firm regarding tax advantage. Ultimately, the benefit is being enjoyed by the equityholders and debt-holders.

According to some critics the arguments which were advocated by MM, are not valued in the practical world. We know that cost of capital and the value of the firm are practically the product of financial leverage.

#### MM Hypothesis with corporate taxes and capital structure:

The MM Hypothesis is valid if there is perfect market condition. But, in the real world capital market, imperfection arises in the capital structure
of a firm which affects the valuation. Because, presence of taxes invites imperfection.

We are, now, going to examine the effect of corporate taxes in the capital structure of a firm along with the MM Hypothesis. We also know that when taxes are levied on income, debt financing is more advantageous as interest paid on debt is a tax-deductible item whereas retained earning or dividend so paid in equity shares are not tax-deductible.

Thus, if debt capital is used in the total capital structure, the total income available for equity shareholders and/or debt holders will be more. In other words, the levered firm will have a higher value than the unlevered firm for this purpose, or, it can alternatively be stated that the value of the levered firm will exceed the unlevered firm by an amount equal to debt multiplied by the rate of tax.

#### The same can be explained in the form of the following equation:

| $V_1 = V_n + tD$ | where V <sub>1</sub> | <ul> <li>Value of levered firm</li> </ul> |
|------------------|----------------------|-------------------------------------------|
|                  | Vn                   | = Value of unlevered firm                 |
|                  | t                    | = Rate of Corporate tax                   |
|                  | D                    | = Amount of debt                          |

### **Illustration 14.4:**

#### Assume:

Two firms—Firm 'A' and Firm 'B' (identical in all respects except capital structure)

Firm 'A' has financed a 6% debt of Rs. 1,50,000

Firm 'B' Levered

EBIT (for both the firm) Rs. 60,000

Cost of Capital is @ 10%

325

Corporate rate of tax is @ 60%

Compute market value of the two firms.

### Solution :

The market value of the firm 'A' (unlevered)

| =    | $\frac{\text{EBIT } (1-t)}{K_{e}}$                       |
|------|----------------------------------------------------------|
| =    | $\frac{\text{Rs. 60,000 (16)}}{.10}$ (putting the value) |
| =    | Rs. 2,40,000                                             |
| firm | 'B' (levered)                                            |
| =    | V <sub>n</sub> – tD                                      |
| =    | Rs. 2,40,000 + .6 × Rs. 1,50,000                         |
| =    | Rs. 3,30,000                                             |
|      | =<br>=<br>firm<br>=<br>=                                 |

Thus, a firm can lower its cost of capital continuously due to the tax deductibility of interest charges. So, a firm must use the maximum amount of leverage in order to attain the optimum capital structure although the experience that we realise is contrary to the opinion.

In real-world situation, however, firms do not take a larger amount of debt and creditors/lenders also are not interested to supply loan to highly levered firms due to the risk involved in it.

Thus, due to the market imperfection, after tax cost of capital function will be U-shaped. In answer to this criticism, MM suggested that the firm would adopt a target debt ratio so as not to violate the limits of level of debt imposed by creditors. This is an indirect way of stating that the cost of capital will increase sharply with leverage beyond some safe limit of debt. MM Hypothesis with corporate taxes can better be presented with the help of the following diagram:



## 14.8 SUMMARY

In financial management, capital structure theory refers to a systematic approach to financing business activities through a combination of equities and liabilities. There are several competing capital structure theories, each of which explores the relationship between debt financing, equity financing, and the market value of the firm slightly differently. Net Income Approach was first suggested by David Durand in 1952, and he was a proponent of financial leverage. He postulated that a change in financial leverage results in a change in capital costs. In other words, if there's an increase in the debt ratio, capital structure increases and the weighted average cost of capital (WACC) decreases, which results in a higher firm value.According to economists Modigliani and Miller, in the absence of taxes, bankruptcy costs, agency costs, and asymmetric information. In an efficient market, the value of a firm is unaffected by its capital structure.

The Traditional Theory of Capital Structure states that when the Weighted Average Cost of Capital (WACC) is minimized, and the market value of assets is maximized, an optimal structure of capital exists. This is achieved by utilizing a mix of both equity and debt capital. The Traditional Theory of Capital Structure says that a firm's value increases to a certain level of debt capital, after which it tends to remain constant and eventually begins to decrease if there is too much borrowing. This decrease in value after the debt tipping point happens because of overleveraging. A blend of equity and debt financing can lead to a firm's optimal capital structure.

The M&M theorem is a capital structure approach named after Franco Modiglianiand Merton Miller in the 1950s. Modigliani and Miller were two professors who studied capital structure theory and collaborated to develop the capital-structure irrelevance proposition. The Modigliani-Miller theorem (M&M) states that the market value of a company is calculated using its earning power and the risk of its underlying assets and is independent of the way it finances investments or distributes dividends. There are three methods a firm can choose to finance: borrowing, spending profits (versus handing them out to shareholders in the form of dividends), and straight issuance of shares. While complicated, the theorem in its simplest form is based on the idea that with certain assumptions in place, there is no difference between a firm financing itself with debt or equity.

The pecking order theory focuses on asymmetrical information costs. This approach assumes that companies prioritize their financing strategy based on the path of least resistance. Internal financing is the first preferred method, followed by debt and external equity financing as a last resort. To summarize, it is essential for finance professionals to know about the capital structure. Accurate analysis of capital structure can help a company by optimizing the cost of capital and hence improving profitability.

# **14.9 GLOSSARY**

- Trade-off theory: costs and benefits of leverage.
- **Traditional approach and Net income (NI) approach :-** this is an approach in which both cost of debt, and equity are independent of capital structure. The components which are involved in it are constant and don't depend on how much debt the firm is using.
- Net operating income (NOI):- this is an approach in which both value of the firm and weighted average cost are independent of capital structure. Individual holding the debt and equity receives the same cash flows without worrying about the taxes as they are not involved in it.
- **Modigliani-Miller theorem** states that a firm's value is based on its ability to earn revenue plus the risk of its underlying assets.
- The Traditional Theory of Capital Structure states that a firm's value is maximized when cost of capital is minimized and the value of assets is highest.
- **optimal capital structure** is the mix of debt, preferred stock, and common stock that maximizes a company's stock price by minimizing its cost of capital

## **14.10 SELF ASSESSMENT QUESTIONS**

1. What Is Trade-off Theory?

| 2.           | What Is Traditional Approach And Net Income Approach?          |
|--------------|----------------------------------------------------------------|
|              |                                                                |
| 3.           | What Is Miller's Hypothesis With Corporate And Personal Taxes? |
|              |                                                                |
| <b>[4</b> .] | 11 LESSON END EXERCISE                                         |
|              | What do you mean by optimal capital structure?                 |
|              |                                                                |
| 2.           | Explain features of MM Approach.                               |
|              |                                                                |
|              |                                                                |

# **14.12 SUGGESTEDREADINGS**

- I.M.Pandey, Financial Management, Vikas Publisher.
- M.Y.Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

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### LEVERAGES AND CAPITAL STRUCTURE

#### **UNIT-III**

Lesson No. 15

### FACTORS INFLEUNCING CAPITAL STRUCTURE

#### **STRUCTURE**

- 15.2 Objectives
- 15.3 Optimal capital structure
- 15.4 Factors influencing capital structure
- 15.5 Capital structure and valuation
- 15.6 EBITDA Analysis
- 15.7 Summary
- 15.8 Glossary
- 15.9 Self assessment questions
- 15.10 Lesson end exercise
- 15.11 Suggested readings

### **15.1 INTRODUCTION**

The two principal sources of finance for a business firm are equity and debt. What should be the proportions of equity and debt in the capital structure of a firm? Put differently, how much financial leverage should a firm employ? The choice of a firm's capital structure is a marketing problem. It is essentially concerned with how the firm decides to divide its cash flows into two broad components, a fixed component that is earmarked to meet

the obligations toward debt capital and a residual component that belongs to equity shareholders.

Since the objective of financial management is to maximise the value of the firm, the key issue is: What is the relationship between capital structure and firm value? Alternatively, what is the relationship between capital structure and cost of capital? Remember that valuation and cost of capital are inversely related. Given a certain level of earnings, the value of the firm is maximised when the cost of capital is minimised and vice versa. There are different views on how capital structure influences value. Some argue that there is no relationship whatsoever between capital structure and firm value; others believe that financial leverage (i.e. the use of debt capital) has a positive effect on firm value up to a point and negative effect thereafter; still others contend that, other things being equal, greater the leverage, greater the value of the firm.

## **15.2 OBJECTIVES**

After studying this lesson, you will be able to:

- understand the concept of optimal capital structure,
- explain EBITDA,
- identify the factors affecting capital structure.

### **15.3 OPTIMAL CAPITAL STRUCTURE**

Is there an optimal capital structure for a firm? By the term optimal capital structure we mean a particular arrangement of various components of the structure which is just in tune with the both the long term and short term objectives of the firm. An optimal capital structure is the best debt to equity ratio for a firm that maximises its value. The optimal capital structure for a company is one that offers a balance between the ideal debt to equity range and minimises the firm's cost of capital. A combination less or more than the optimal combination would be less than satisfying. Hence, a sub-optimal combination would affect the achievement of the goal of

maximisation of the shareholders' wealth. But can we plan and design an optimal capital structure? For designing such a structure, one would need the following information: – The requirement of capital of the firm – Availability of different components – Cost of these components – Rate of return from investment It has to be further kept in mind that the above information should be exact information. In reality it is not possible to have the exact information on all the above four parameters. Secondly whatever information is available is for a particular period. Thus, we have to design the structure in a static set-up which makes the design devoid of all flexibility. The real world of business, however, is a dynamic world with ever changing demand and supply of various components of the capital structure. Hence, we can not formulate the optimal capital structure in a static framework. The process has to be carried out in a dynamic framework of interdependent investment and financing decisions that yield optimal values within the constraints at the time and place when the decisions were made. We can, therefore, say that the optimal capital structure is an ideal situation which can function as the benchmark of performance for a firm. But this benchmark is invincible and the firm can expect to achieve moderated or toned down versions of this benchmark depending upon dynamics of each project.

## **15.4 FACTORS INFLUENCING CAPITAL STRUCTURE**

Under the capital structure, decision regarding the proportion of longterm sources of capital is determined. Most favourable proportion determines the optimum capital structure. That happens to be the need of the company because EPS happens to be the maximum on it. Some of the chief factors affecting the choice of the capital structure are the following:

**a.** Cash Flow Position While making a choice of the capital structure the future cash flow position should be kept in mind. Debt capital should be used only if the cash flow position is really good because a lot of cash is needed in order to make payment of interest and refund of capital.

- **b.** Interest Coverage Ratio-ICR- With the help of this ratio an effort is made to find out how many times the EBIT is available to the payment of interest. The capacity of the company to use debt capital will be in direct proportion to this ratio. It is possible that inspite of better ICR the cash flow position of the company may be weak. Therefore, this ratio is not a proper or appropriate measure of the capacity of the company to pay interest. It is equally important to take into consideration the cash flow position.
- c. Debt Service Coverage Ratio-DSCR- This ratio removes the weakness of ICR. This shows the cash flow position of the company. This ratio tells us about the cash payments to be made (e.g., preference dividend, interest and debt capital repayment) and the amount of cash available. Better ratio means the better capacity of the company for debt payment. Consequently, more debt can be utilised in the capital structure.
- **d. Return on Investment-ROI** The greater return on investment of a company increases its capacity to utilise more debt capital.
- e. Cost of Debt The capacity of a company to take debt depends on the cost of debt. In case the rate of interest on the debt capital is less, more debt capital can be utilised and vice versa.
- **f.** Tax Rate The rate of tax affects the cost of debt. If the rate of tax is high, the cost of debt decreases. The reason is the deduction of interest on the debt capital from the profits considering it a part of expenses and a saving in taxes. For example, suppose a company takes a loan of 0ppp 100 and the rate of interest on this debt is 10% and the rate of tax is 30%. By deducting 10/- from the EBIT a saving of in tax will take place (If 10% on account of interest are not deducted, a tax of @ 30% shall have to be paid).
- **g.** Cost of Equity Capital Cost of equity capital (it means the expectations of the equity shareholders from the company) is affected

by the use of debt capital. If the debt capital is utilised more, it will increase the cost of the equity capital. The simple reason for this is that the greater use of debt capital increases the risk of the equity shareholders. Therefore, the use of the debt capital can be made only to a limited level. If even after this level the debt capital is used further, the cost of equity capital starts increasing rapidly. It adversely affects the market value of the shares. This is not a good situation. Efforts should be made to avoid it.

- h. Floatation Costs Floatation costs are those expenses which are incurred while issuing securities (e.g., equity shares, preference shares, debentures, etc.). These include commission of underwriters, brokerage, stationery expenses, etc. Generally, the cost of issuing debt capital is less than the share capital. This attracts the company towards debt capital.
- i. Risk Consideration: There are two types of risks in business
  - (i) **Operating Risk or Business Risk-** This refers to the risk of inability to discharge permanent operating costs (e.g., rent of the building, payment of salary, insurance installment, etc.).
  - (ii) Financial Risk- This refers to the risk of inability to pay fixed financial payments (e.g., payment of interest, preference dividend, return of the debt capital, etc.) as promised by the company. The total risk of business depends on both these types of risks. If the operating risk in business is less, the financial risk can be faced which means that more debt capital can be utilised. On the contrary, if the operating risk is high, the financial risk likely occurring after the greater use of debt capital should be avoided.
- **j. Flexibility** According to this principle, capital structure should be fairly flexible. Flexibility means that, if need be, amount of capital in the business could be increased or decreased easily. Reducing the amount of capital in business is possible only in case of debt capital or preference share capital. If at any given time company has more capital

than as necessary then both the above-mentioned capitals can be repaid. On the other hand, repayment of equity share capital is not possible by the company during its lifetime. Thus, from the viewpoint of flexibility to issue debt capital and preference share capital is the best.

- **k.** Control According to this factor, at the time of preparing capital structure, it should be ensured that the control of the existing shareholders (owners) over the affairs of the company is not adversely affected. If funds are raised by issuing equity shares, then the number of company's shareholders will increase and it directly affects the control of existing shareholders. In other words, now the number of owners (shareholders) controlling the company increases. This situation will not be acceptable to the existing shareholders. On the contrary, when funds are raised through debt capital, there is no effect on the control of the company because the debenture holders have no control over the affairs of the company. Thus, for those who support this principle debt capital is the best.
- 1. Regulatory Framework Capital structure is also influenced by government regulations. For instance, banking companies can raise funds by issuing share capital alone, not any other kind of security. Similarly, it is compulsory for other companies to maintain a given debt-equity ratio while raising funds. Different ideal debt-equity ratios such as 2:1; 4:1; 6:1 have been determined for different industries. The public issue of shares and debentures has to be made under SEBI guidelines.
- **m.** Stock Market Conditions Stock market conditions refer to upward or downward trends in capital market. Both these conditions have their influence on the selection of sources of finance. When the market is dull, investors are mostly afraid of investing in the share capital due to high risk. On the contrary, when conditions in the capital market are cheerful, they treat investment in the share capital as the best choice to reap profits. Companies should, therefore, make selection of capital sources keeping in view the conditions prevailing in the capital market.

**n.** Capital Structure of Other Companies Capital structure is influenced by the industry to which a company is related. All companies related to a given industry produce almost similar products, their costs of production are similar, they depend on identical technology, they have similar profitability, and hence the pattern of their capital structure is almost similar. Because of this fact, there are different debt- equity ratios prevalent in different industries. Hence, at the time of raising funds a company must take into consideration debt-equity ratio prevalent in the related industry.

### **15.5 CAPITAL STRUCTURE AND VALUATION**

There is a theme that the capital structure should be conducive to increase in valuation of the firm. By valuation, we mean that the market value or the realisable value of the owners' equity should increase. This can happen in case value of both components of the shareholders' equity, i.e. share capital and retained earnings increases. Value of the share capital is reflected in the market value of the firm in case the shares are traded on the stock exchange. This market value, under ideal conditions, is indicative of the inherent value and is different from both the face value and the book value. The capital structure should be such as maximises the inherent value of the firm. Retained earnings also have a book value, i.e. the value at which these earnings are carried in the books of the firm. The inherent value of the retained earnings depends upon the future returns which these earnings can generate for the owners. As earnings of the firm increase, its valuation also increases. Earnings can increase either directly through increased level of operations of the firm or indirectly through decrease in cost of capital of the firm. The direct increase in earnings is dependent upon the investment decisions and the changes in capital structure have no explicit bearing upon these earnings. Capital structure plays an important part in increase in earnings brought about by change in cost of different components of the structure.

# 15.6 EBITDA ANALYSIS (EARNINGS BEFORE INTEREST, TAX, DEPRECIATION AND AMORTIZATION)

EBITDA, an acronym for "earnings before interest, taxes, depreciation and amortization," is an often-used measure of the value of a business. EBITDA is calculated by taking net income and adding interest, taxes, depreciation and amortization expenses back to it. EBITDA is used to analyze a company's operating profitability before non-operating expenses (such as interest and "other" non-core expenses) and non-cash charges (depreciation and amortization).

#### Analysis with EBITDA

EBIDTA enables analysts to exclude the impacts of non-operating activities and focus on the outcome of operating decisions. Non-operating activities include interest expenses, tax rates, and large non-cash items such as depreciation and amortization. By removing the non-operating effects, EBITDA gives investors the ability to focus on the profitability of their operations. This type of analysis is particularly important when comparing similar companies across a single industry.

#### **Limitations of EBITDA**

Factoring out interest, taxes, depreciation and amortization can make even completely unprofitable firms appear to be fiscally healthy. The use of EBITDA as measure of financial health made these firms look attractive. EBITDA numbers are easy to manipulate. If fraudulent accounting techniques are used to inflate revenues and interest, taxes, depreciation and amortization are factored out of the equation, almost any company may appears to be profitable and great. Operating cash flow is a better measure of how much cash a company is generating because it adds non-cash charges (depreciation and amortization) back to net income and includes the changes in working capital that also use or provide cash (such as changes in receivables, payables and inventories). These working capital factors are the key to determining how much cash a company is generating. If investors do not include changes in working capital in their analysis and rely solely on EBITDA, they will miss clues that indicate whether a company is losing money because it isn't making any sales. Despite various shortcomings, there are some good reasons for using EBITDA.

- 1. The first factor to consider is that EBITDA can be used as a shortcut to estimate the cash flow available to pay debt on long-term assets, such as equipment and other items with a lifespan measured in decades rather than years. Dividing EBITDA by the amount of required debt payments yields a debt coverage ratio. Factoring out the "ITDA" of EBITDA was designed to account for the cost of the long-term assets and provide a look at the profits that would be left after the cost of these tools was taken into consideration.
- 2. Another factor is that EBITDA estimate to be reasonably accurate, the company under evaluation must have legitimate profitability. Using EBITDA to evaluate old-line industrial firms is likely to produce useful results. This idea was lost during the 1980s, when leveraged buyouts were fashionable, and EBITDA began to be used as a proxy for cash flow. This evolved into the more recent practice of using EBITDA to evaluate unprofitable dotcoms as well as firms such as telecoms, where technology upgrades are a constant expense.
- 3. EBITDA can also be used to compare companies against each other and against industry averages. In addition, EBITDA is a good measure of core profit trends because it eliminates some of the extraneous factors and allows a more "apples-to-apples" comparison. Ultimately, EBITDA should not replace the measure of cash flow, which includes the significant factor of changes in working capital. Remember "cash is king" because it shows "true" profitability and a company's ability to continue operations.

### **15.7 SUMMARY**

The choice of a firm's capital structure is a marketing problem. It is essentially concerned with how the firm decides to divide its cash flows into two broad components, a fixed component that is earmarked to meet the obligations toward debt capital and a residual component that belongs to equity shareholders. Since the objective of financial management is to maximise the value of the firm, the key issue is: What is the relationship between capital structure and firm value? Alternatively, what is the relationship between capital structure and cost of capital? Remember that valuation and cost of capital are inversely related. Given a certain level of earnings, the value of the firm is maximised when the cost of capital is minimised and vice versa. There are different views on how capital structure influences value. Some argue that there is no relationship whatsoever between capital structure and firm value; others believe that financial leverage (i.e. the use of debt capital) has a positive effect on firm value up to a point and negative effect thereafter; still others contend that, other things being equal, greater the leverage, greater the value of the firm.

## 15.8 GLOSSARY

- **Speculation**: Speculation is the practice of engaging in risky financial transactions in an attempt to profit from short or medium term fluctuations in the market value of a tradable good such as a financial instrument, rather than attempting to profit from the underlying financial attributes embodied in the instrument such as capital gains, interest, or dividends.
- **Risk management:** Risk management is the identification, assessment, and prioritisation of risks followed by coordinated and economical application of resources to minimise, monitor, and control the probability and/or impact of unfortunate events or to maximise the realisation of opportunities.

- **Merchant Banking:** The term merchant banking is generally understood to mean negotiated private equity investment by financial institutions in the unregistered securities of either privately or publicly held companies. Both commercial banks and investment banks may engage in merchant banking activities.
- **Mutual Fund:** A mutual fund is a type of professionally managed collective investment vehicle that pools money from many investors to purchase securities
- Leasing: Leasing is a process by which a firm can obtain the use of a certain fixed assets for which it must pay a series of contractual, periodic, tax deductible payments

## **15.9 SELF ASSESSMENT QUESTIONS**

1. What simplifying assumptions are commonly made to study the relationship between capital structure and firm value?

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2. Discuss EBITDA.

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# **15.10 LESSON END EXERCISE**

1. Explain the factors influencing capital structure of a firm.

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2. Explain optimal capital structure.

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# **15.11 SUGGESTED READINGS**

- I.M.Pandey, Financial Management, Vikas Publisher.
- M.Y.Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

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WORKING CAPITAL MANAGEMENT

UNIT-IV

Lesson No. 16

CONCEPT : NEED FOR WORKING CAPITAL, FACTORS INFLUENCING THE COMPOSITION OF WORKING CAPITAL

STRUCTURE

- 16.1 Introduction
- 16.2 Objectives
- 16.3 Concept of Working Capital
- 16.4 Meaning of Working Capital
- 16.5 Types of Working Capital
- 16.6 Composition of Working Capital
- 16.7 Need for Working Capital
- 16.8 Factors Influencing the Composition of Working Capital
- 16.9 Summary
- 16.10 Glossary
- 10.11 Self Assessment Questions
- 10.12 Lesson End Exercise
- 10.13 Suggested Readings

16.1 INTRODUCTION

Working Capital Management refers to the planning, execution and control of investment in and financing of working capital. Working capital management is concerned with the problems that arise in attempting to manage the current assets, the current liabilities and the inter-relationships that exist between them.

In other words working capital refers to that part of the firm's capital which is required for financing short term or current assets such as cash, marketable securities, debtors and inventories.

The basic ingredients of the theory of working capital management may be said to include its definition, need, optimum level of current assets, the tradeoff between profitability and risk associated with a firm's level of current assets and current liabilities, financing-mix strategies and so on.

16.2 OBJECTIVES

After going through this chapter students will able to understand:

- the need of Working Capital in a business?
- objectives and types of Working Capital
- various components of Working Capital and its interdependence

16.3 CONCEPT OF WORKING CAPITAL

There are two major concepts of working capital – net working capital and gross working capital. When accountants use the term working capital, they are generally referring to net working capital, which is the current assets minus current liabilities.

This is one measure of the extent to which the firm is protected from liquidity problems.From a management viewpoint, however, it makes little sense to talk about trying to actively manage a net difference between current assets and current liabilities, particularly when that difference is continually changing. Financial analysts, on the other hand, mean current assets when they speak of working capital. Therefore, their focus is on gross working capital which is The firm's investment in the current assets(like cash and marketable securities ,receivables, and inventory). As the discussion of working capital management unfolds, our concern will be to consider the administration of the firm's current assets – namely, cash and marketable securities, receivables, and inventory – and the financing (especially current liabilities) needed to support current assets.

16.4 MEANING OF WORKING CAPITAL

Money invested in long term assets is called 'Long term Funds' or 'Fixed Capital'. Business also needs funds for short-term purposes to finance current operations. Investment in short term assets like cash, inventories, debtors etc., is called 'Short-term Funds' or 'Working Capital'. The 'Working Capital' can be categorized, as funds needed for carrying out day-to-day operations of the business smoothly. The management of the working capital is equ ally important as the management of long-term financial investment. Every running business needs working capital. Even a business which is fully equipped with all types of fixed assets required is bound to collapse without (i) adequate supply of raw materials for processing; (ii) cash to pay for wages, power and other costs; (iii) creating a stock of finished goods to feed the market demand regularly; and, (iv) the ability to grant credit to its customers. All these require working capital. Working capital is thus like the lifeblood of a business. The business will not be able to carry on day-today activities without the availability of adequate working capital.

According to Hoogland "Working capital descriptive of that capital which is not fixed. But the more common use of the working capital is to consider it as the difference between the book value of the current assets and current liabilities.

16.5 TYPES OF WORKING CAPITAL

The working capital can be classified on the basis of concept and on the basis of time.

Types of working capital On the basis of concept

Generally there are two concepts of working capital. They are gross working capital and net working capital. But they are defined by different names. They are explained below:

- Gross working capital : Working capital refers to gross working capital. It is also defined as financial concept or going concern concept. It means the capital invested in the current assets of the firm. Current assets mean the assets which can be converted into cash easily or within one accounting period. It helps in determining the return on investment in working capital and providing correct amount of working capital at right time.
- 2) Net working capital : Working capital refers to net working capital. It is also defined as accounting concept. It means excess of current assets over current liabilities. It helps in finding out firm's capability to meet short term liabilities as well as indicates the financial soundness of the enterprise.

Net working capital = current assets – current liabilities

Net working capital can be negative or positive. When current assets are more than the current liabilities than working capital is positive and when current assets are less than the current liabilities than working capital is negative.

At the end we can say, that both the working capital are important but according to the suitability gross working capital is suitable for companies having separate ownership or management while net working capital is suitable for sole trader companies or partnership firms.

Types of working capital on the basis of time

 Permanent working capital: It is also called fixed working capital. It means to carry on the day to day expenses the firm is required to maintain the minimum amount of working capital. For example, the firm is required to maintain the minimum level of raw material, finished goods or cash balance, etc.

- a) **Regular working capital :-** It means the minimum amount which the firm has to keep with itself to carry on the day to day operation.
- **b) Reserve working capital :-** It means the excess amount over the regular working capital for uncertain circumstances like strike, lock out, depression, etc.
- 2) **Temporary working capital**: it is also called variable working capital, which is required to meet the seasonal demands as well as for special purposes.
 - a) Seasonal working capital :- It is required to meet the seasonal needs of the enterprise.
 - **b**) **Special working capital :-**It is required for some special purposes of the enterprise. For example, advertising the product of the firm requires special working capital.Temporary working capital is for short period and fluctuates while permanent working capital is stable and fixed.



Fig. : Types of working Capital

16.6 COMPOSITION OF WORKING CAPITAL

The study of composition of working capital management is another name for the study of working capital cycle. In other words, we can say that the study of structure of working capital is the study of the element of current assets and current liabilities. Current assets consist of inventory, bills receivable, cash is hand, stores, bank balance and others liquid resources like short term or temporary investment. Current liabilities consist of bills payable, creditors, unpaid dividend, unpaid taxes and other such things which are payable within a year. This study of working capital is another name for study of elements of current assets over current liabilities.

CURRENT ASSETS (LOANS AND ADVANCES) SHORT TERM ASSETS

These are those real assets which are intended to be disposed off and get it converted into money / money's worth within a period of 12 months. Examples:

Closing Stock (RM, WIP, Finished Goods) Sundry Debtors Bills Receivable Cash in Hand and Bank Pre-paid Expenses Loans Given Advance to Suppliers, etc.

CURRENT LIABILITIES (AND PROVISIONS) SHORT TERM LIABILITIES:- These are those outsiders liabilities which are payable within a period of 12 months.

Examples:

Sundry Creditors Bills Payable O/S Expenses Advance from Customers Tax Payable Bank Overdraft, etc.

Working Capital is also known as circulating capital, fluctuating capital and revolving capital. The magnitude and composition of working capital keeps on changing continuously, in the course of business.

16.7 NEED FOR WORKING CAPITAL

Working capital is the life blood and nerve center of business. Working capital is very essential to maintain smooth running of a business. No business can run successfully without an adequate amount of working capital and its estimation is required for the following :

- 1. Strengthen the Solvency:- Working capital helps to operate the business smoothly without any financial problem for making the payment of short-term liabilities. Purchase of raw materials and payment of salary, wages and overhead can be made without any delay. Adequate working capital helps in maintaining solvency of the business by providing uninterrupted flow of production.
- 2. Enhance Goodwill :- Sufficient working capital enables a business concern to make prompt payments and hence helps in creating and maintaining goodwill. Goodwill is enhanced because all current liabilities and operating expenses are paid on time.
- **3.** Easy Obtaining Loan :- A firm having adequate working capital, high solvency and good credit rating can arrange loans from banks and financial institutions in easy and favorable terms.
- 4. **Regular Supply of Raw Material :-** Quick payment of credit purchase of raw materials ensures the regular supply of raw materials for suppliers. Suppliers are satisfied by the payment on time. It ensures regular supply of raw materials and continuous production.

5. Smooth Business Operation :- Working capital is really a life blood of any business organization which maintains the firm in well condition. Any day to day financial requirement can be met without any shortage of fund. All expenses and current liabilities are paid on time.

16.8 FACTORS INFLUENCING THE COMPOSITION OF WORKING CAPITAL

Main factors affecting the composition of working capital are as follows:

(1) **Nature of Business :-** The requirement of working capital depends on the nature of business. The nature of business is usually of two types: manufacturing business and trading business. In the case of manufacturing business it takes a lot of time in converting raw material into finished goods. Therefore, capital remains invested for a long time in raw material, semi-finished goods and the stocking of the finished goods.

Consequently, more working capital is required. On the contrary, in case of trading business the goods are sold immediately after purchasing or sometimes the sale is affected even before the purchase itself. Therefore, very little working capital is required. Moreover, in case of service businesses, the working capital is almost nil since there is nothing in stock.

- (2) Scale of Operations :- There is a direct link between the working capital and the scale of operations. In other words, more working capital is required in case of big organisations while less working capital is needed in case of small organisations.
- (3) **Business Cycle :-** The need for the working capital is affected by various stages of the business cycle. During the boom period, the demand of a product increases and sales also increase. Therefore, more working capital is needed. On the contrary, during the period of depression, the demand declines and it affects both the production and sales of goods. Therefore, in such a situation less working capital is required.

(4) Seasonal Factors :- Some goods are demanded throughout the year while others have seasonal demand. Goods which have uniform demand the whole year their production and sale are continuous. Consequently, such enterprises need little working capital.

On the other hand, some goods have seasonal demand but the same are produced almost the whole year so that their supply is available readily when demanded.

Such enterprises have to maintain large stocks of raw material and finished products and so they need large amount of working capital for this purpose. Woolen mills are a good example of it.

(5) **Production Cycle :-** Production cycle means the time involved in converting raw material into finished product. The longer this period, the more will be the time for which the capital remains blocked in raw material and semi-manufactured products.

Thus, more working capital will be needed. On the contrary, where period of production cycle is little, less working capital will be needed.

- (6) **Credit Allowed :-** Those enterprises which sell goods on cash payment basis need little working capital but those who provide credit facilities to the customers need more working capital.
- (7) **Credit Availed :-** If raw material and other inputs are easily available on credit, less working capital is needed. On the contrary, if these things are not available on credit then to make cash payment quickly large amount of working capital will be needed.
- (8) **Operating Efficiency :-** Operating efficiency means efficiently completing the various business operations. Operating efficiency of every organisation happens to be different.
 - Some such examples are: (i) converting raw material into finished goods at the earliest, (ii) selling the finished goods quickly, and (iii) quickly getting payments from the debtors. A company which has a better operating efficiency has to invest less in stock and the debtors.

Therefore, it requires less working capital, while the case is different in respect of companies with less operating efficiency.

(9) Availability of Raw Material :- Availability of raw material also influences the amount of working capital. If the enterprise makes use of such raw material which is available easily throughout the year, then less working capital will be required, because there will be no need to stock it in large quantity.

On the contrary, if the enterprise makes use of such raw material which is available only in some particular months of the year whereas for continuous production it is needed all the year round, then large quantity of it will be stocked. Under the circumstances, more working capital will be required.

- (10) Growth Prospects :- Growth means the development of the scale of business operations (production, sales, etc.). The organizations which have sufficient possibilities of growth require more working capital, while the case is different in respect of companies with less growth prospects.
- (11) Level of Competition :- High level of competition increases the need for more working capital. In order to face competition, more stock is required for quick delivery and credit facility for a long period has to be made available.
- (12) Inflation :- Inflation means rise in prices. In such a situation more capital is required than before in order to maintain the previous scale of production and sales. Therefore, with the increasing rate of inflation, there is a corresponding increase in the working capital.

16.9 SUMMARY

Working capital is the life blodd and nerve centre of a business. Just as circulation of blood is essential in the human body for maintaining life, working capital essential to maintain the smooth running of a business. No business can run successfully without an adequate amount of working capital.

Working capital is is important for several reasons. For one thing, the current assets of a typical manufacturing firm account for over half of its total assets. For a distribution company, they account for even more. Excessive levels of current assets can easily result in a firm realisinga substandard return on investment. However, firms with too few current assets may incur shortages and difficulties in maintaining smooth operations.For small companies, current liabilities are the principal source of external financing. These firms do not have access to the longer-term capital markets, other than to acquire a mortgage on a building. The fast-growing but larger company also makes use of current liability financing.For these reasons, the financial manager and staff devote a considerable portion of their time to working capital matters. The management of cash, marketable securities, accounts receivable, accounts payable, accruals, and other means of shortterm financing is the direct responsibility of the financial manager; only the management of inventories is not. Moreover, these management responsibilities require continuous, day-to-day supervision. Unlike dividend and capital structure decisions, you cannot study the issue, reach a decision, and set the matter aside for many months to come. Thus working capital management is important, if for no other reason than the proportion of the financial manager's time that must be devoted to it. More fundamental, however, is the effect that working capital decisions have on the company's risk, return, and share price.

16.10 GLOSSARY

- Working Capital:- The excess of current assets over current liabilities.
- Working Capital Management :- Aggregation of total current assests & current liabilities.
- **Gross Working Capital :-** Aggreation of total current assets is called gross working capital.
- **Net Working Capital :-** The difference between current assets minus current liabilities.

16.11 SELFASSESSMENT QUESTIONS

Q1. Explain meaning and various concepts of working capital ?

Q2. What are the different types of working capital ?

Q3. Explain the composition of working capital ?

16.12 LESSON END EXERCISE

Q1. Why working capital is required in business?

Q2. What are the factors influencing the composition of working capital?

16.13 SUGGESTED READINGS

Fundamental of Financial Management
 Fundamental of Financial Management

3) Financial Management

Prashna Chandra Eugene F. Brigham Joel F. Houston P K Jain M Y Khan

WORKING CAPITAL MANAGEMENT

UNIT-IV

Lesson No. 17

OBJECTIVES, FACTORS AND INTERDEPENDENCE OF WORKING CAPITAL

STRUCTURE

17.1 Introduction

17.2 Objectives

17.3 Objectives of Working Capital

17.4 Interdependence among components of Working Capital

17.5 Operating cycle Approach to working capital

17.6 Summary

17.7 Glossary

17.8 Self Assesment Questions

17.9 Lesson end Exercise

17.11 Suggested Readings

17.1 INTRODUCTION

Working Capital management is concerned with the problems that arise in attempting to manage the current asstes, the current liabilities and the interretationship that exists between them. The goal of working capital management is to manage the firm's current asstes and liabilities in such a way that a satisfactory level of working capital is maintained. This is so because if the firm cannot maintain a satisfactory level of working capital, it is likely to become insolvent and may even be forced into bankruptey. The interaction between current assets and current liabilities is , therefore, the main theme of the theory of working management.

17.2 OBJECTIVES

After going through this chapter students will able to understand:

- Objectives of working capital.
- The components of working capital.
- Operating Cycle approach to working capital.

17.3 OBJECTIVES OF WORKING CAPITAL

Following are the main objectives of working capital management:

- 1. To manage firm's assets and liabilities : The goal of working capital management is to manage the firm's current assets and current liabilities in such a way that a satisfactory level of working capital is maintained, to meet the short-term obligations as and when they arise.
- 2. Short term liquidity : A significant objective of working capital management is to ensure short-term liquidity and to see that profitability is not affected by the way current assets and current liabilities are managed.
- **3.** To maintain optimum level of current assets and liabilties : The main theme of working capital management is the interaction between the current assets and the current liabilities and arrives at the optimum level of both. The optimum level thus arrived must have provision for contingencies.
- 4. Trade-off between Profitability and Risk: The level of a firm's Net working capital has a bearing on its profitability as well as risk. The term profitability used in this context is measured by profits after expenses. The term risk is defined as the probability that a firm will become technically insolvent so that it will not be able to meet its obligations when they become due for payment. The risk of becoming technically insolvent is measured using Net Working Capital. The

greater the net working capital, the more liquid the firm is and therefore the less likelihood of it becoming technically insolvent. The relationship between liquidity, net working capital and risk is such that if either net working capital or liquidity increases, the firm's risk decreases.

- 5. **Trade-off :** If a firm wants to increase its profits, it must also increase its risk. Inversely, if it decreases risk, its profitability too tends to decrease. The trade-off between these variables is that regardless of how the firm increases its profitability through the manipulation of working capital, the consequence is a corresponding increase in risk as measured by the level of Net working capital.
- 6. Apart from the profitability risk trade-off, another important ingredient of the theory of working capital management is determining the financing mix. Financing mix refers to the proportion of current assets that would be financed by current liabilities and by long-term resources.

17.4 INTERDEPENDENCE AMONG COMPONENTS OF WORKING CAPITAL

Different industries have different optimum working capital profiles, reflecting their methods of doing business and what they are selling.

- Businesses with a lot of cash sales and few credit sales should have minimal trade debtors. Supermarkets are good examples of such businesses;
- Businesses that exist to trade in completed products will only have finished goods in stock. Compare this with manufacturers who will also have to maintain stocks of raw materials and work-in-progress.
- Some finished goods, notably foodstuffs, have to be sold within a limited period because of their perishable nature.
- Larger companies may be able to use their bargaining strength as customers to obtain more favourable, extended credit terms from suppliers.

By contrast, smaller companies, particularly those that have recently started trading (and do not have a track record of credit worthiness) may be required to pay their suppliers immediately.

- Some businesses will receive their money at certain times of the year, although they may incur expenses throughout the year at a fairly consistent level. This is often known as "seasonality" of cash flow. For example, travel agents have peak sales in the weeks immediately following Christmas.
 - Working capital needs also fluctuate during the year
 - The amount of funds tied up in working capital would not typically be a constant figure throughout the year.
 - Only in the most unusual of businesses would there be a constant need for working capital funding. For most businesses there would be weekly fluctuations.
 - Many businesses operate in industries that have seasonal changes in demand. This means that sales, stocks, debtors, etc. would be at higher levels at some predictable times of the year than at others.

In principle, the working capital need can be separated into two parts:

- A fixed part, and
- A fluctuating part

The fixed part is probably defined in amount as the minimum working capital requirement for the year. It is widely advocated that the firm should be funded in the way shown in the diagram as on :


Time

The more permanent needs (fixed assets and the fixed element of working capital) should be financed from fairly permanent sources (e.g. equity and loan stocks); the fluctuating element should be financed from a short-term source (e.g. a bank overdraft), which can be drawn on and repaid easily and at short notice.

17.5 OPERATING CYCLE APPROACH TO WORKING CAPITAL

In terms of liquidity, there is a difference between current and fixed assets. To recover the initial investment in fixed assets, a firm requires many years. On the contrary, investments in current assets are turned over many times in a year. Investments in current assets such as inventories and debtors (accounts receivables) are realised during the firm's operating cycle, which is usually less than a year.

Operating cycle is the time duration required to convert sales, after the conversion of resources into inventories and that into current assets.

The operating cycle of a manufacturing company involves three phases.

- ♦ Acquisition of resources such as raw materials, labor, power and fuel.
- Manufacture of the product, which includes conversion of raw materials into Work-in-progress, work-in-progress into finished goods.
- Sale may be either for Cash or on credit. Credit sales create accounts receivable for collection.

These phases affect cash flows, which are neither synchronized nor certain. They are not synchronised because Cash outflows usually occur before Cash inflows. Cash outflows are relatively certain whereas the cash inflows are difficult to be forecastdue to the time gap between sales and collections. This requires the firm to invest in current Assets for uninterrupted operations. Liquidity has to be maintained to purchase raw materials and pay expenses, as there is hardly a matching between Cash inflows and outflows. Cash is also held to meet any future obligations. Stock of raw materials and Work-in-progress are kept to ensure smooth production and to guard against nonavailability of raw materials and other components. The firm holds stock of finished goods to meet the demands of customers on continuous basis and sudden demand from some other customers. Debtors are created because goods are sold on credit for marketing and competitive reasons. Thus, a firm makes adequate investment in materials, and debtors, for smooth, uninterrupted production and sales.

The length of the operating cycle of a manufacturing firm can be defined as the sum of inventory conversion period (ICP) and debtor's conversion period (DCP).

Inventory Conversion Period (ICP) :- It is the total time needed for producing and selling the product which includes raw materials conversion period (RMCP), work-in-progress conversion period (WIPCP) and finished goods conversion period (FGCP).Raw Material Conversion Period refers to the period in which the raw materials are generally kept in stores before they are issued for manufacturing to production department. Work-in-Progress Conversion Period refers to the period for which the raw material remains in the manufacturing process before it is taken out as finished product.

Finished Goods Conversion Period refers to the period for which finished products remain in stores before being sold to a customer.

Debtors Conversion Period (DCP) :- It is the time required to collect the outstanding amount from customers.

Gross Operating Cycle (GOC) :- The total of inventory conversion period and debtors' conversion period is referred to as Gross Operating Cycle (GOC) and symbolically represented as

GOC = RMCP + WIPCP + FGCP + DCP

RMCP =Average Stock of Raw materialsRaw materials consumption per dayWIPCP =Average Stock of Work-in-progressTotal cost of production per dayFGCP =Average Stock of Finished GoodsFGCP =Total cost of Sales per dayAverage Accounts ReceivableDCP =Net Credit Sales per day

However, a firm may acquire resources for production activities, on credit and temporarily postpone the payment of certain expenses, which can be invested in Current Assets. The Payable Deferred Period (PDP) is the length of time the firm is able to defer payments on various resource purchases. The difference between Gross Operating Cycle and the Payable Deferred Period is Net Operating Cycle (NOC)

Thus,

NOC = GOC - PDP

Where,

Average Payments

Net Credit Purchases per day72

17.6 SUMMARY

PDP =

In the preceding sections you learnt that every running business needs working capital. Even a business which is fully equipped with all types of fixed assets required is bound to collapse without (i) adequate supply of raw materials for processing; (ii) cash to pay for wages, power and other costs; (iii) creating a stock of finished goods to feed the market demand regularly; and, (iv) the ability to grant credit to its customers. All these require working capital. Working capital is thus like the lifeblood of a business. The business will not be able to carry on day-to-day activities without the availability of adequate working capital

Therefore, a firm needs working capital because the production, sales and cash flows are not instantaneous. The firm needs cash to purchase raw materials and pay expenses, as there may not be perfect matching between cash inflows and outflows. Cash may also be held up to meet future exigencies. The stocks of raw materials are kept in order to ensure smooth production and to protect against the risk of non-availability of raw materials. Also stock of finished goods has to be maintained to meet the demand of customers on continuous basis and sudden demand of some customers. Businessmen today try to keep minimum possible stock as it leads to blockage of capital. Goods are sold on credit for competitive reasons. Thus, an adequate amount of funds has to be invested in current assets for a smooth and uninterrupted production and sales process.

17.7 GLOSSARY

- **Current Assets :-** Current assets are those assets which will be converted into cash within one year without undergoing a diminutionces value & without disrupting the operation of the firm.
- **Current Liability :-** Current liabilities are those which will be paid within one year out of current assets or earnings of the concern.
- **Inflation :-** General rise in price is called inflation.

17.8 SELFASSESSMENT QUESTIONS

Q1. What is the need of estimation of working capital ?

Q2. What are the factors affecting composition of working capital ?

Q3. Explain operating cycle approach to working capital ?

17.9 LESSON END EXERCISE

Q1. What is the debtor conversion period (DCP) ?

Q2. Explain independance among components of working capital.

17.11 SUGGESTED READINGS

- 1) Fundamental of Financial Management Prashna Chandra
- Fundamental of Financial Management Eugene F. Brigham and Joel F. Houston
- 3) Financial Management P K Jain and M Y Khan

WORKING CAPITAL MANAGEMENT

UNIT-IV

Lesson No. 18

INVENTORY MANAGEMANT : NATURE AND ROLE

STRUCTURE

- 18.1 Introduction
- 18.2 Objectives
- 18.3 Concept of Inventory Management
- 18.4 Meaning of Inventory management
- 18.5 Purpose of inventory
- 18.6 Nature of Inventory and its role in working capital
- 18.7 Summary
- 18.8 Glossary
- 18.9 Self Assesment Questions
- 18.10 Suggested Readings

18.1 INTRODUCTION

Inventory is the stock of any item or resource used in an organisation. An inventory system is the set of policies and controls that monitor levels of inventory and determine what levels Should be maintained, when stock should be replenished, and how large orders should be. By convention, manufacturing inventory generally refers to items that contribute to or become part of a firm's product output. Manufacturing inventory is typically classified into raw materials, finished products, component parts, supplies, and work-in-process. In distribution, inventory is classified as in-transit, meaning that it is being moved in the system, and warehouse, which is inventory in a warehouse or distribution center. Retail sites carry inventory for immediate sale to customers. In services, inventory generally refers to the tangible goods to be sold and the supplies necessary to administer the service.

18.2 OBJECTIVES

After going through this chapter students will able to understand:

- various types of inventories and its role in working capital
- techniques involved in inventory management
- purpose of inventory in managing the working capital
- challenges of inventory faced by the business

18.3 CONCEPT OF INVENTORY MANAGEMENT

Before we ask ourselves "what is inventory management" we need to first of all understand the definition of inventory. Inventory quite simply consists of materials and supplies in various formats held in stock by business to provide a service to their customers.

Inventory can be sub-divided into a number of categories, three primary ones being,

1. Raw Material: Material which has not yet been processed in any format.

2. Work in Progress (WIP): Raw Material and other components which have been partially assembled or completed.

3. Finished Product: Completed items ready for sale to Customers.

Effective inventory management is critical to delivering superior business results to most organisations whether in manufacturing or distribution. key measurement for success in inventory management is having what you need, when you need it, and at the required location.Different industries will have different perspectives in relation to what is inventory management but in general the concepts are mainly similar. Most business organisations strive on a daily basis to improve their customer service performance and reducing lead-times from order to delivery is a key performance improvement measure (KPI) The challenge however in achieving this improvement is to simultaneously reduce both inventory levels and freight costs whilst also minimising out of stocks on critical items.

There are many activities you can focus on as part of an effective inventory management policy.

• Manage & Understand your Customer Demand: If this is inaccurate then you will end up with either over or under supply. Both scenario's bring their own respective challenge!

• **Increase your Inventory Turnover:** As Inventory is capital tied up including the charges for handling, storage and management you will need to keep it to a minimum. A measure of progress is the number of times your stock turns usually on an annual basis. The calculation normally is made as follows, "cost of goods sold divided by the average inventory for the period"

• **Implement an Inventory Control process:** Introduce an inventory cycle count system to quickly identify stock errors. The number of items counted should be statistically reflective of the number of transactions and appropriate measures implemented to resolve identified errors.

• **Consider a "Kanban" system of inventory control :** It can be simply a series of coloured cards which appear as the container of goods empties prompting the replenishment of more before a shortage develops.

• Manage and Re-Organise your Warehouse: The principle of "a place for everything and everything in its place" should apply to storage areas as much as to manufacturing and other areas of business. Ensure your warehouse is well organised with clear signage in place. Segregation and a clear material

flow should be obvious even to personnel not familiar with the area.

Implement Standard Operating Procedures: Formalise your operating activities with written inventory control procedures.

These should be brief but specific with the test being a reader not familiar with the area or processes should on reviewing an SOP have a good understanding of the task being performed.

The best procedures are often those drafted by personnel actually carrying out the activity who also can be the best people in training peers and colleagues. Whether you operate within a large multi-store environment or a small business inventory management depends on understanding all the activities which can impact either negatively or positively on the performance.

In the process of understanding what is inventory management there are numerous other activities to focus on and implement as part of an effective inventory program eg just in time inventory policies and others.

18.4 MEANING OF INVENTORY MANAGEMENT

In any business or organisation, all functions are interlinked and connected to each other and are often overlapping. Some key aspects like supply chain management, logistics and inventory form the backbone of the business delivery function. Therefore these functions are extremely important to marketing managers as well as finance controllers.

Inventory management is a very important function that determines the health of the supply chain as well as the impacts the financial health of the balance sheet. Every organisation constantly strives to maintain optimum inventory to be able to meet its requirements and avoid over or under inventory that can impact the financial figures.

Inventory is always dynamic. Inventory management requires constant and careful evaluation of external and internal factors and control through planning and review. Most of the organisations have a separate department or job function called inventory planners who continuously monitor, control and review inventory and interface with production, procurement and finance departments.

Defining Inventory

Inventory is an idle stock of physical goods that contain economic value, and are held in various forms by an organisation in its custody awaiting packing, processing, transformation, use or sale in a future point of time.

Any organisation which is into production, trading, sale and service of a product will necessarily hold stock of various physical resources to aid in future consumption and sale. While inventory is a necessary evil of any such business, it may be noted that the organisations hold inventories for various reasons, which include speculative purposes, functional purposes, physical necessities etc.

From the above definition the following points stand out with reference to inventory:

- All organisations engaged in production or sale of products hold inventory in one form or other.
- Inventory can be in complete state or incomplete state.
- Inventory is held to facilitate future consumption, sale or further processing/value addition.
- All inventoried resources have economic value and can be considered as assets of the organization

18.5 PURPOSE OF INVENTORY

All firms keep a supply of inventory for the following reasons:

- 1. To maintain independence of operations. A supply of materials at a work center allows that center flexibility in operations. For example, because there are costs for making each new production setup, this inventory allows management to reduce the number of setups.
- 2. To meet variation in product demand. If the demand for the product is known precisely, it may be possible (though not necessarily economical) to produce the product to exactly meet the demand.

Usually, however, demand is not completely known, and a safety or buffer stock must be maintained to absorb variation.

- **3.** To allow flexibility in production scheduling. A stock of inventory relieves the pressure on the production system to get the goods out. This causes longer lead times, which permit production planning for smoother flow and lower-cost operation through larger lot-size production. High setup costs, for example, favor producing a larger number of units once the setup has been made.
- 4. To provide a safeguard for variation in raw material delivery time. When material is ordered from a vendor, delays can occur for a variety of reasons: a normal variation in shipping time, a shortage of material at the vendor's plant causing backlogs, an unexpected strike at the vendor's plant or at one of the shipping companies, a lost order, or a shipment of incorrect or defective material.
- 5. To take advantage of economic purchase order size. There are costs to place an order: labor, phone calls, typing, postage, and so on. Therefore, the larger each order is, the fewer the orders that need be written. Also, shipping costs favor larger orders—the larger the shipment, the lower the per-unit cost.
- 6. Many other domain-specific c reasons. Depending on the situation, inventory may need to be carried. For example, in-transit inventory is material being moved from the suppliers to customers and depends on the order quantity and the transit lead time. Another example is inventory that is bought in anticipation of price changes such as fuel for jet planes or semiconductors for computers.

18.6 NATURE OF INVENTORY AND ITS ROLE IN WORKING CAPITAL

Following are the role of inventory in managing working capital:

(i) To minimise the possibility of disruption in the Production schedule of a firm for want of raw material, stock and spares. (ii) To keep down capital investment in inventories. So it is essential to have necessary inventories. Excessive inventory is an idle resource of a concern. The concern should always avoid this situation. The investment in inventories should be just sufficient in the optimum level.

The major Dangers of excessive inventories are:

- (i) The unnecessary tie up of the firm's funds and loss of profit.
- (ii) Excessive carrying cost, and
- (iii) The risk of liquidity.

The excessive level of inventories consumes the funds of business, which cannot be used for any other purpose and thus involves an opportunity cost. The carrying cost, such as the cost of shortage, handling insurance, recording and inspection, are also increased in proportion to the volume of inventories. This cost will impair the concern profitability further. On the other hand, a low level of inventories may result in frequent interruptions in the production schedule resulting in under-utilization of capacity and lower sales. The aim of inventory management thus should be to avoid excessive inventory and inadequate inventory and to maintain adequate inventory for smooth running of the business operations. Efforts should be made to place orders at the right time with the right source to purchase the right quantity at the right price and quality.

The effective inventory management should

- (i) Maintain sufficient stock of raw material in the period of short supply and anticipate price changes.
- (ii) Ensure a continuous supply of material to production department facilitating uninterrupted production.
- (iii) Minimize the carrying cost and time.
- (iv) Maintain sufficient stock of finished goods for smooth sales operations.
- (v) Ensure that materials are available for use in production and production services as and when required.

- (vi) Ensure that finished goods are available for delivery to customers to fulfil orders, smooth sales operation and efficient customer service.
- (vii) Minimise investment in inventories and minimize the carrying cost and time.
- (viii)Protect the inventory against deterioration, obsolescence and unauthorised use.
- (ix) Maintain sufficient stock of raw material in period of short supply and anticipate price changes.
- (x) Control investment in inventories and keep it at an optimum level.

18.7 SUMMARY

Finally, inventory management has to do with keeping accurate records of finished goods that are ready for shipment. This often means posting the production of newly completed goods to the inventory totals as well as subtracting the most recent shipments of finished goods to buyers. When the company has a return policy in place, there is usually a sub-category contained in the finished goods inventory to account for any returned goods that are reclassified as refurbished or second grade quality. Accurately maintaining figures on the finished goods inventory makes it possible to quickly convey information to sales personnel as to what is available and ready for shipment at any given time.

In addition to maintaining control of the volume and movement of various inventories, inventory management also makes it possible to prepare accurate records that are used for accessing any taxes due on each inventory type. Without precise data regarding unit volumes within each phase of the overall operation, the company cannot accurately calculate the tax amounts. This could lead to underpaying the taxes due and possibly incurring stiff penalties in the event of an independent audit.

18.8 GLOSSARY

- **Inventory :-** The value of unsold goods is called stocks or Inventory
- Lead time :-It refers to the time normally taken in receiving the delievery after placing orders with the suppliers
- **Saftey Stocks :-** It implies extra stock that can be drawn down when actual lead time are greater tahan expected.

18.9 SELFASSESSMENT QUESTIONS

After reading this chapter students must be able to answer following questions:

Q1. Describe meaning & concepts of Inventory ?

Q2. Determine the purpose of Inventory ?

Q3. Explain nature and role of inventory in working Capital?

18.10 SUGGESTED READINGS

- 1) Fundamental of Financial Management Prashna Chandra
- 2) Fundamental of Financial Management Eugene F. Brigham and Joel F. Houston
- 3) Financial Management PK Jain and MY Khan

WORKING CAPITAL MANAGEMENT

UNIT-IV

Lesson No. 19

TECHNIQUES OF INVENTORY MANAGEMENT, CASH MANAGEMENT - CONCEPT AND TECHNIQUES

STRUCTURE

- 19.1 Introduction
- 19.2 Objectives
- 19.3 Types and costs of Inventory
- 19.4 Inventory costs
- 19.5 Techniques of Inventory Management
 - 19.5.1 ABC Analysis of Inventory Management
 - 19.5.2 Demand and Supply of Inventory Management
 - 19.5.3 Economic Order Quantity
- 19.6 Challenges of Inventory
- 19.7 Cash Management Concept
- 19.8 Motives for holding cash
- 19.9 Cash Budgeting
- 19.10 Long term Forecasting
- 19.11 Cash Reports
- 19.12 Cash Collection and Disbursement

- 19.13 Electronic Data Interchange
- 19.14 Optimal Cash Balance
- 19.15 Investment of Surplus Funds
- 19.16 Criteria for Evaluating Investment Instrument
- 19.17 Techniques of Cash Management
- 19.18 Summary
- 19.19 Glossary
- 19.20 Self Assessment Questions
- 19.21 Lesson and exercise
- 19.22 Suggested readings

19.1 INTRODUCTION

Inventories constitute the most significant part of current assets of a large majority of compaines in India.On an average, inventories are approximately 60 percent of current assets in public limited compaines in India. Because of the large size of inventories maintained by firms, a considereable amount of funds is required to be committed to them. It is, therefor, absolutely imperaritive to manage inventories efficiently and effectively in order to avoid unnecessary investment. A firm neglecting the management of inventories will be jeopardising its long-run profitability and may fail ultimately. It is possible for a company to reduce its levels of inventories to a considerable degree. e.g, 10 to 20 percent, without any adverse effect on production and sales, by using simple inventory planning and control techniques. The reduction in excessive inventories carries a favourable impact on comapny's profitability.

19.2 OBJECTIVES

After going through this chapter students will able to understand:

• Types and cost of Inventory

- Techniques of Inventory
- Challenges of Inventory

19.3 TYPES AND COSTS OF INVENTORY

Inventory procurement, storage and management is associated with huge costs associated with each these functions.

Inventory costs are basically categorised into three headings:

- 1. Ordering Cost
- 2. Carrying Cost
- 3. Shortage or stock out Cost & Cost of Replenishment
- a. Cost of loss, pilferage, shrinkage and obsolescence etc.
- b. Cost of logistics
- c. Sales discounts, volume discounts and other related costs.
- 1. Ordering Cost :- Cost of procurement and inbound logistics costs form a part of Ordering Cost. Ordering Cost is dependent and varies based on two factors The cost of ordering excess and the Cost of ordering too less.

Both these factors move in opposite directions to each other. Ordering excess quantity will result in carrying cost of inventory. Where as ordering less will result in increase of replenishment cost and ordering costs.

These two above costs together are called Total Stocking Cost. If you plot the order quantity vs the TSC, you will see the graph declining gradually until a certain point after which with every increase in quantity the TSC will proportionately show an increase.

This functional analysis and cost implications form the basis of determining the Inventory Procurement decision by answering the two basic fundamental questions - How Much to Order and When to Order. How much to order is determined by arriving at the Economic Order Quantity or EOQ.

2. Carrying Cost :- Inventory storage and maintenance involves various types of costs namely:

Inventory Storage Cost

Cost of Capital

Inventory carrying involves Inventory storage and management either using in house facilities or external warehouses owned and managed by third party vendors. In both cases, inventory management and process involves extensive use of building, material handling equipments, IT Software applications and hardware equipments coupled managed by operations and management staff resources.

- a. Inventory Storage Cost :- Inventory storage costs typically include cost of building rental and facility maintenance and related costs. cost of material handling equipments, IT hardware and applications, including cost of purchase, depreciation or rental or lease as the case may be. Further costs include operational costs, consumables, communication costs and utilities, besides the cost of human resources employed in operations as well as management.
- **b.** Cost of Capital :- Includes the costs of investments, interest on working capital, taxes on inventory paid, insurance costs and other costs associate with legal liabilities.

The inventory storage costs as well as cost of capital is dependent upon and varies with the decision of the management to manage inventory in house or through outsourced vendors and third party service providers.

Current times, the trend is increasingly in favor of outsourcing the inventory management to third party service provides. For one thing the organizations find that managing inventory operations requires certain core competencies, which may not be inline with their business competencies. They would rather outsource to a supplier who has the required competency than build them in house.

Secondly in case of large-scale warehouse operations, the scale of investments may be too huge in terms of cost of building and material handling equipments etc. Besides the project may span over a longer period of several years, thus blocking capital of the company, which can be utilized into more important areas such as R & D, Expansion etc. than by staying invested into the project.

19.4 INVENTORY COST

In making any decision that affects inventory size, the following costs must be considered:

- Holding (or carrying) costs :- This broad category includes the costs for storage facilities, handling, insurance, pilferage, breakage, obsolescence, depreciation, taxes, and the opportunity cost of capital. Obviously, high holding costs tend to favor low inventory levels and frequent replenishment.
- 2. Setup (or production change) costs :- To make each different product involves obtaining the necessary materials, arranging specific equipment setups, filling out required papers, appropriately charging time and materials, and moving out the previous stock of material.

If there were no costs or loss of time in changing from one product to another, many small lots would be produced. This would reduce inventory levels, with a resulting savings in cost. One challenge today is to try to reduce these setup costs to permit smaller lot sizes. (This is the goal of a JIT system.)

3. Ordering costs :- These costs refer to the managerial and clerical costs to prepare the purchase or production order. Ordering costs

include all the details, such as counting items and calculating order quantities. The costs associated with maintaining the system needed to track orders are also included in ordering costs.

19.5 TECHNIQUES OF INVENTORY MANAGEMENT

19.5.1 ABC Analysis of inventory management

The ABC inventory control technique is based on the principle that a small portion of the items may typically represent the bulk of money value of the total inventory used in the production process, while a relatively large number of items may from a small part of the money value of stores. The money value is ascertained by multiplying the quantity of material of each item by its unit price. According to this approach to inventory control high value items are more closely controlled than low value items. Each item of inventory is given A, B or C denomination depending upon the amount spent for that particular item. "A" or the highest value items should be under the tight control and under responsibility of the most experienced personnel, while "C" or the lowest value may be under simple physical control. It may also be clear with the help of the following

Examples:

"A" Category -5% to 10% of the items represent 70% to 75% of the money value.

"B" Category -15% to 20% of the items represent 15% to 20% of the money.

"C" Category – The remaining number of the items represent 5% to 10% of the money value.

The relative position of these items show that items of category A should be under the maximum control, items of category B may not be given that much attention and item C may be under a loose control.

After classification, the items are ranked by their value and then the cumulative percentage of total value against the percentage of item is noted. A detailed analysis of inventory may indicate above figure that only 10 per cent of item may account for 75 per cent of the value, another 10 per cent of item may account for 15 per cent of the value and remaining percentage items may account for 10 per cent of the value. The importance of this tool lies in the fact that it directs attention to the key items.

Advantages of ABC Analysis

- 1. It ensures a closer and a more strict control over such items, which are having a sizable investment in there.
- 2. It releases working capital, which would otherwise have been locked up for a more profitable channel of investment.
- 3. It reduces inventory-carrying cost.
- 4. It enables the relaxation of control for the 'C' items and thus makes it possible for a sufficient buffer stock to be created. It enables the maintenance of high inventory turn over rate.

19.5.2 Demand and supply of inventory management

Either by the top management or by the materials department could set the norms for inventories. The top management usually sets monitory limits for investment in inventories. The materials department has to allocate this investment to the various items and ensure the smooth operation of the concern. It would be worthwhile if norms of inventories were set by the management by objectives, concept. This concept expects the top management to set the inventory norms (limit) after consultation with the materials department. A number of factors enter into consideration in the determination of stock levels for individual items for the purpose of control and economy.

Some of them are:

- 1. Lead time for deliveries.
- 2. The rate of consumption.

- 3. Requirements of funds.
- 4. Keeping qualities, deterioration, evaporation etc.
- 5. Storage cost.
- 6. Availability of space.
- 7. Price fluctuations.
- 8. Insurance cost.
- 9. Obsolescence price.
- 10. Seasonal consideration of price and availability.
- 11. EOQ (Economic Order Quantity), and
- 12. Government and other statuary restriction

Any decision involving procurement storage and uses of item will have to be based on an overall appreciation of the influence of the critical ones among them. Material control necessitates the maintenance of inventory of every item of material as low as possible ensuring at the same time, its availability as and when required for production. These twin objectives are achieved only by a proper planning of inventory levels. It the level of inventory is not properly planned, the results may either be overstocking or under stocking. If a large stock of any item is carried it will unnecessarily lock up a huge amount of working capital and consequently there is a loss of interest. Further, a higher quantity than what is legitimate would also result in deterioration. Besides there is also the risk of obsolescence if the end product for which the inventory is required goes out of fashion. Again, a large stock necessarily involves an increased cost of carrying such as insurance, rent handling charges. Under stocking which is other extreme, is equally undesirable as it results in stock outs and the consequent production holds ups. Stoppage of production in turn, cause idle facility cost. Further, failure to keep up delivery schedules results in the loss of customers and goodwill. These two extreme can be avoided by a proper fixation of two important inventory level viz, the maximum level and the minimum level. The fixation of inventory levels is also known as the demand and supply method of inventory control. Carrying too much or too little of the inventories is detrimental to the company. If too little inventories are maintained, company will have to encounter frequent stock outs and incur heavy ordering costs. Very large inventories subjects the company to heavy inventory carrying cost in addition to unnecessary ties up of capital. An efficient inventory management, therefore, requires the company to maintain inventories at an optimum level where inventory costs are minimum and at the same time there is no stock out which may result in loss of sale or stoppage of production. This necessitates the determination of the minimum and maximum level of inventories.

Minimum Level

The minimum level of inventories of their reorder point may be determined on the following bases:

- 1 Consumption during lead-time.
- 2 Consumption during lead-time plus safety stock.
- 3 Stock out costs.
- 4 Customers irritation and loss of goodwill and production hold costs.

To continue production during Lead Time it is essential to maintain some inventories. Lead Time has been defined as the interval between the placing of an order (with a supplier) and the time at which the goods are available to meet the consumer needs.

There are sometimes fluctuations in the lead-time and/ or in the consumption rate. If no provision is made for these variations, stock out may take place-causing disruption in the production schedule of the company. The stock, which takes care to the fluctuation in demand, varies in lead-time and consumption rate is known as safety stock. Safety stock may be defined as the minimum additional inventory, which serves as a safety margin or buffer or cushion to meet an unanticipated increase in usage resulting from an unusually high demand and or an uncontrollable late receipt of incoming inventory. It can be determined on the basis of the

consumption rate, plus other relevant factor such as transport bottleneck, strikes or shutdowns.

In the case of uncertainly, the probabilistic approach may be applied to determine the safety margin. To avoid stock out arising out of such eventualities, companies always carry some minimum level of inventories including safety stock. Safety stock may not be static for all the times. A change in the circumstances and in the nature of industry demand, necessitates are adjusted in its level. In this study an effort has been made to examine how the current companies determine their minimum level for re-order inventories, safety stock, whether a level of study is maintained throughout the year or not.

For each type of inventory a maximum level is set that demand presumably will not exceed as well as a minimum level representative a margin of safety required to prevent out of stock condition. The minimum level also governs the ordering point. An order to sufficient size is placed to bring inventory to the maximum point when the minimum level is reached.

Maximum Level

The upper limit beyond which the quantity of any item is not normally allowed to rise is known as the "Maximum Level". It is the sum total of the minimum quantity, and ECQ. The fixation of the maximum level depends upon a number of factors, such as, the storage space available, the nature of the material i.e. chances of deterioration and obsolescence, capital outlay, the time necessary to obtain fresh supplies, the ECQ, the cost of storage and government restriction.

Re-Order Level

Also known as the 'ordering level' the reorder level is that level of stock at which a purchase requisition is initiated by the storekeeper for replenishing the stock. This level is set between the maximum and the minimum level in such a way that before the material ordered for are received into the stores, there is sufficient quantity on hand to cover both normal and abnormal circumstances. The fixation of ordering level depends upon two important factors viz, the maximum delivery period and the maximum rate of consumption.

Re-Order Quantity

The quantity, which is ordered when the stock of an item falls to the reorder level, is know as the reorder quantity or the EOQ or the economic lot size. Although it is not a stock level as such, the reorder quantity has a direct bearing upon the stock level in as much as it is necessary to consider the maximum and minimum stock level in determining the quantity to be ordered. The re-order quantity should be such that, when it is added to the minimum quantity, the maximum level is not exceeded. the re-order quantity depends upon two important factors viz, order costs and inventory carrying costs. It is, however, necessary to remember that the ordering cost and inventory carrying cost are opposed to each other. Frequent purchases in small quantities, no doubt reduce carrying cost, but the ordering costs such as the cost inviting tenders of placing order and of receiving and inspection, goes up. If on the other hand purchases are made in large quantities, carrying costs, such as, the interest on capital, rent, insurance, handling charges and losses and wastage, will be more than the ordering costs. The EOQ is therefore determined by balancing these opposing costs.

19.5.3 Economic Order Quantity (EOQ)

Economic order quantity (EOQ) is the order quantity of inventory that minimizes the total cost of inventory management.

Two most important categories of inventory costs are ordering costs and carrying costs. Ordering costs are costs that are incurred on obtaining additional inventories. They include costs incurred on communicating the order, transportation cost, etc. Carrying costs represent the costs incurred on holding inventory in hand. They include the opportunity cost of money held up in inventories, storage costs, spoilage costs, etc.

Ordering costs and carrying costs are quite opposite to each other. If we need to minimize carrying costs we have to place small order which increases the ordering costs. If we want minimize our ordering costs we have to place few orders in a year and this requires placing large orders which in turn increases the total carrying costs for the period.

We need to minimise the total inventory costs and EOQ model helps us just do that.

Total inventory costs = Ordering costs + Holding costs

By taking the first derivative of the function we find the following equation for minimum cost

 $EOQ = SQRT(2 \times Quantity \times Cost Per Order / Carrying Cost Per Order)$

Example 19.1

ABC Ltd. is engaged in sale of footballs. Its cost per order is \$400 and its carrying cost unit is \$10 per unit per annum. The company has a demand for 20,000 units per year. Calculate the order size, total orders required during a year, total carrying cost and total ordering cost for the year.

Solution

 $EOQ = SQRT(2 \times 20,000 \times 400/10) = 1,265$ units

Annual demand is 20,000 units so the company will have to place 16 orders (= annual demand of 20,000 divided by order size of 1,265). Total ordering cost is hence 64,000 (400 multiplied by 16).

Average inventory held is 632.5 ((0+1,265)/2) which means total carrying costs of \$6,325 (i.e. $632.5 \times 10).



Fig 19.1 : Economic order quantity

19.6 CHALLENGES OF INVENTORY

The latest trend in all industries has been to outsource inventory management functions to Third Party Service providers. Companies outsource both Raw Material Inventory as well as Finished Goods to the Service Provider.

In case of finished goods inventory, depending upon the supply chain design, there may be multiple stocking points at national, regional and state levels. In such an event each of the warehouse a different service provider may manage operations, as one may not be able to find a supplier having operations all over the country.

Therefore the inventory in such a situation will be managed in the Company's system as well as in the Service provider's system. Inventory management and control becomes a critical function especially in such situations where multi locations and multiple service providers are involved.

To ensure Inventory control is maintained across all locations, following critical points if focused upon will help:

 Establish and outline Operations Process for Service Providers: Draw up SOP - Standard Operating procedure detailing warehouse operations process, warehouse inventory system process as well as documentation process.

Especially in a 3rd Party Service Provider's facility, it is important to have process adherence as well as defined management, authorisation and escalation structure for operations failing which inventory operations will not be under control.

- 2. Establish inventory visibility at each of the location through MIS Reports: Draw up list of reports and MIS data for all locations and ensure they are mailed to a central desk in the inventory team for daily review. The inventory team leader should analyze daily reports of all locations and highlight any non-conformity and resolve them as well as update the management.
- 3. Initiate Daily Stock count procedure to be carried out at all of the locations and reported back to the inventory desk.

Daily stock count should be able to reflect location accuracy, stock accuracy as well as transaction summary for the day.

- 4. Monthly audits and inventory count should be implemented at all locations without fail and insist on one hundred percent adherence.
- 5. Quarterly inventory wall-to-wall count or half yearly and annual wall-to-wall count should be implemented depending upon the volume of transactions as well as value of transactions at each location.
- 6. Central Inventory team to be responsible for ensuring review of all reports and controlling inventories at all locations.

- Inventory reconciliation involves reconciling physical inventory at site with the system inventory at 3PL Site and then reconciling 3PL System stocks with company's system stock.
- 8. Visiting major sites and being present during physical stock audits on quarterly or half yearly basis is very important.
- 9. Lastly keep reviewing processes and ensure training and re training is carried out regularly and at all times at site so that a process oriented culture is imbibed and all operating staff understand the importance of maintaining processes as well as inventory health.

Inventory is nothing but money to the company. If 3PL vendor is managing the inventory, needless to say you should have your processes in place to be able to control and maintain inventory health.

19.7 CASH MANAGEMENT CONCEPT

Cash Management is usually required by a group to carry out three classic missions:

- Monitor the cash situation: forecasting the evolution of current receipts and payments;
- Manage the cash balance: making up cash de? cits at the lowest cost and investing excess cash with the best return and an acceptable degree of risk;
- Conduct risk management for liquidity, rates and exchange.

However, cash missions take on an entirely different dimension, the Cash Management team being specifcally responsible for:

- Monitoring the cash positions of the Group and its subsidiaries;
- Centralising cash management: on one hand, balancing the accounts of the member companies in the Group to avoid financial costs due to market imperfections and, on the other, favoring the Group's access to financial markets;

• Calculating and monitoring the indicators and ratios of debt, solvability, working capital and working capital requirements, releasing cash flows, etc.

Cash Management cannot limit itself to purely technical management, specialising in the best possible organisation of monetary and financial flows for the Group. It also acts as the point of convergence for all flows:

- By making all the company heads and senior staff in the Group aware of the "cash-effect" induced by any investment or management decision,
- Through the ongoing improvement of procedures for circulating information on accounting and finance,
- By advising the directorship of the Group, or even warning them about strategic choices with important financial implications.

Consequently, Cash Management is also responsible for helping to define and implement Group strategy, notably by:

- Working out its financial strategies through proposals in the short, medium and long term for raising capital, portfolio optimisation, etc.,
- Mancing acquisition operations,
- Overall management of the relations between the Group and its bank partners, notably in the choice of partners, negotiating conditions, integrating computer relations, etc.;
- By protecting assets through controls, both a posteriori (bank reconciliation) and a priori (principally in bank powers).

Cash Management is also required to take account of the fnancial flows in various currencies and manage exchange risks, i.e.

- Forecasting cash out flows and inflows for the companies in the Group;
- Managing these flows and liquidities, including export debts;
- Organising foreign currency cash services and specialised bodies, if need be: coordinating centre, cash pool or netting system (allowing bilateral or multilateral compensation between accounts receivable and accounts payable in the same currency).

19.8 MOTIVES FOR HOLDING CASH

Cash, the most liquid asset, is of vital importance to the daily operations of business firms. While the proportion of corporate assets held in the form of cash is very small, often between 1 and 4 percent, its efficient management is crucial to the solvency of the business because in a very important sense cash is the focal point of fund flows in a business. In view of its importance, it is generally referred to as the "life blood of a business enterprise." Why does a firm need cash? As John Maynard Keynes put forth, there are three possible motives for holding cash.

- Transaction Motive Firms need cash to meet their transaction needs. The collection of cash (from sale of goods and services, sale of assets, and additional financing) is not perfectly synchronised with the disbursement of cash (for purchase of goods and services, acquisition of capital assets, and meeting other obligations). Hence, some cash balance is required as a buffer.
- **Precautionary Motive** There may be some uncertainty about the magnitude and timing of cash inflows from sale of goods and services, sale of assets, and issuance of securities. Likewise, there may be uncertainty about cash outflows on account of purchases and other obligations. To protect itself against such uncertainties, a firm may require some cash balance.
- **Speculative Motive** Firms would like to tap profit making opportunities arising from fluctuations in commodity prices, security prices, interest rates, and foreign exchange rates. A cash rich firm is better prepared to exploit such bargains. However, for most firms their reserve borrowing capacity and marketable securities would suffice to meet their speculative needs.

While cash serves these functions, it is an idle resource which has an opportunity cost. The liquidity provided by cash holding is at the expense of profits sacrificed by foregoing alternative investment opportunities. Hence, the financial manager should (i) establish reliable forecasting and reporting systems, (ii) improve cash collections and disbursements, and (iii) achieve optimal conservation and utilisation of funds.

19.9 CASH BUDGETING

Cash budgeting or short-term cash forecasting is the principal tool of cash management. Cash budgets, routinely prepared by business firms, are helpful in: (i) estimating cash requirements, (ii) planning short-term financing, (iii) scheduling payments in connection with capital expenditure projects, (iv) planning purchases of materials, (v) developing credit policies, and (vi) checking the accuracy of long-term forecasts.

Firms use multiple short-term forecasts, of varying length and detail, suited to meet different needs. The commonly used designs for short-term cash forecasts are: (i) one year divided into quarters or months, (ii) one quarter divided into months, and (iii) one month divided into weeks. A firm, hard pressed with liquidity crunch, may even prepare a weekly cash forecast divided into days.1 The point to be emphasised here is that these multiple formats serve differing purposes and should not be regarded as mutually exclusive. The principal method of short-term cash forecasting is the receipts and payments method. Sometimes the adjusted net income method is used though this method is employed mainly for long-term cash forecasting.

Receipts and Payments Method

The cash budget prepared under this method shows the timing and magnitude of expected cash receipts and payments over the forecast period. It includes all expected receipts and payments irrespective of how they are classified in accounting. The items of cash receipts and cash payments and the bases for estimating them are shown in Exhibit 19.1. From Exhibit 19.1 it is clear that the receipts and payments method of cash forecasting calls for information about estimated sales, production plan, purchasing plan, financing plan, and capital expenditure budget. The most crucial input in the entire process, of course, is the figure of estimated sales because various business plans are closely related to estimated sales.

Illustration The preparation of cash budget may be illustrated with an example. ABC Company manufactures plastic bags. Its estimated sales for the period January 20X0 through

June 20X0 are as follows: Rs.100,000 per month from January through March and Rs.120,000 per month from April through June. The sales for November and December of the previous year have been Rs.100,000 each. Cash and credit sales are expected to be 20 percent and 80 percent respectively. The receivables from credit sales are expected to be collected as follows: 50 percent of receivables, on an average, one month from the date of sale and the balance 50 percent, on an average, two months from the date of sale. No bad debt losses are expected to occur. Other anticipated receipts are: (i) Rs.5,000 from the sale of a machine in March, and (ii) Rs.2,000 interest on securities in June. Given this information, the forecasted cash receipts have been tabulated in Exhibit 19.2.

Exhibit 19.1 Items of Cash Receipts and Payments and the Basis of Their Estimation

Items	Basis of Estimation			
Cash sales	Estimated sales and its division between cash and credit sales. Estimated sales, its division between cash and credit sales, and collection pattern. Firm's portfolio of securities and return expected from the portfolio.			
Collection of accounts receivable				
Interest and dividend receipts				
Increase in loans/ deposits and issue of securities	Financing plan.			
Sale of assets	Proposed disposal of assets.			
Cash purchases	Estimated purchases and its division between cash and credit purchases.			
Payment of purchases	Estimated purchases, its division between cash purchases and credit purchases, and terms of credit purchases.			
Wages and salaries	Manpower employed and wages and salaries structure.			
Manufacturing expenses	Production plan.			
General, administration and selling expenses	Administration and sales personnel and proposed sales promotion and distribution expenditure			
Capital equipment purchases	Capital expenditure budget and payment pattern associated with capital equipment purchases.			
Repayment of loans and retirement of securities	Financing plan.			

Exhibit 19.2 Forecast of Cash Receipts

	January	February	March	April	May	June
1. Sales	100,000	100,000	100,000	120,000	120,000	120,000
2. Credit sales	80,000	80,000	80,000	96,000	96,000	96,000
3. Collection of accounts receivable	80,000	80,000	80,000	80,000	88,000	96,000
4. Cash sales	20,000	20,000	20,000	24,000	24,000	24,000
 Receipt from sale of equipment 			5,000			
6. Interest						2,000
Total cash receipts (3 + 4 + 5 + 6)	100,000	100,000	105,000	104,000	112,000	122,000

We now consider the forecast of cash payments. ABC Company plans to purchase materials worth Rs.40,000 in January and February and materials worth Rs.48,000 each
month from March through June. The payments for these purchases are made approximately a month after the purchase. The purchases for December of the previous year have been Rs.40,000 for which payment will be made in January 20X0. Miscellaneous cash purchases of Rs.2,000 per month are planned from January through June. Wage payments are expected to be Rs.15,000 per month; general administrative and selling expenses are expected to be Rs.10,000 per month. Dividend payment of Rs.20,000 and tax payment of Rs.20,000 are scheduled in June 20X0. A machine worth Rs.50,000 is proposed to be purchased on cash in March 20X0. Given this information, the proposed payments are shown in Exhibit 19.3.

Exhibit 19.3 Forecast of Cash Payments

							(RS.)
	the set of sector sector sector	January	February	March	April	May	June
1.	Material purchases	40,000	40,000	48,000	48,000	48,000	48,000
2.	Credit material purchases	40,000	40,000	48,000	48,000	48,000	48,000
3.	Payment of accounts payable	40,000	40,000	40,000	48,000	48,000	48,000
4.	Miscellaneous cash purchases	2,000	2,000	2,000	2,000	2,000	2,000
5.	Wages	15,000	15,000	15,000	15,000	15,000	15,000
6.	Manufacturing expenses	20,000	20,000	20,000	20,000	20,000	20,000
7.	General administrative and selling expenses	10,000	10,000	10,000	10,000	10,000	10,000
8.	Dividend	_	—	_	_	_	20,000
9.	Тах	_	-	_	-	_	20,000
10.	Capital expenditure	_	_	50,000	_	_	_
	Total payments	87,000	87,000	137,000	95,000	95,000	135,000
	(3+4+5+6+7+8+9+10)						

Assuming that the cash balance on 1st January 20X0 is Rs.22,000 and the minimum cash balance required by the firm is Rs.20,000, we can now prepare a summary statement. This statement, shown in Exhibit 19.4, calculates the surplus/ deficit in relation to the minimum required. From Exhibit 19.4 it can be seen that a cash shortage is expected to occur during March and it would disappear in April as the business operations result in cash inflows. The shortage expected in March is due to the proposed capital expenditure

of Rs.50,000. The management can avoid this shortage by adopting one or more of the following means: (i) postponement of asset acquisition to April, (ii) deferring a portion of the payment for the capital asset to April, and (iii) resorting to short-term borrowing for the month of March.

Deviations from Expected Cash Flows

Expressed as it is in numbers, the cash budget often conveys a picture of precision. Hence, a great deal of faith is usually put on it. A moment's reflection, however, would reveal that the figures found in the cash budget merely represent estimates of future cash flows. The actual cash flows are likely to deviate from the estimates provided in the cash budget—the extent of deviation depends mainly on how volatile are the cash flows of the business.

Given the uncertainties characterising business operations, estimating the cash flows on the basis of a single set of assumptions, as is done in conventional cash budgeting, often results in an inadequate perspective on the future. Hence, it is advisable to prepare additional cash budgets, based on different sets of assumptions. The least that a firm may do is to look at cash forecasts under three possible scenarios: pessimistic scenario, normal scenario, and optimistic scenario. Such an analysis provides a better perspective on future cash flows and facilitates the formulation of contingency plans.

Exhibit 19.4 Summary Cash Forecast

							(Rs.)
		January	February	March	April	May	June
1.	Opening cash balance	22,000					
2.	Receipts	100,000	100,000	105,000	104,000	112,000	122,000
3.	Payments	87,000	87,000	137,000	95,000	95,000	135,000
4.	Net cash flow $(2-3)$	13,000	13,000	(32,000)	9,000	17,000	(13,000)
5.	Cumulative net cash flow	13,000	26,000	(6,000)	3,000	20,000	7,000
6.	Opening cash balance + Cumulative net cash flow (1 + 5)	35,000	48,000	16,000	25,000	42,000	29,000
7.	Minimum cash balance required	20,000	20,000	20,000	20,000	20,000	20,000
8.	Surplus or deficit in relation to the minimum cash balance required $(6-7)$	15,000	28,000	(4,000)	5,000	22,000	9,000

Evaluation

The receipts and payments method of cash forecasting is used commonly because of two advantages: (i) It provides a complete picture of expected cash flows, (ii) It is a sound vehicle for exercising control over day-to-day transactions. This method, however, has some drawbacks too: (i) Its reliability is impaired by delays in collection or sudden demand for large payments and other similar factors, (ii) It fails to provide a clear picture of important changes in the company's working capital movement, especially those relating to inventories and receivables.

19.10 LONG-TERM CASH FORECASTING

The dividing line between short-term cash forecasts and long-term cash forecasts is usually one year, though the distinction is somewhat arbitrary. Long-term cash forecasts are generally prepared for a period ranging from two to five years and serve to provide a broad brush picture of a firm's financing needs and availability of investible surplus in future. Such forecasts are helpful in planning capital investment outlays and long-term financing. While the receipts and disbursements method can theoretically be used for preparing the long-term cash forecast, the method that is generally used for this purpose is the adjusted net income method. This method of cash forecasting, resembling the funds flow statements, seeks to estimate the firm's need for cash at some future date and indicate whether this need can be met from internal sources or not. A format for preparing the adjusted net income forecast is shown in Exhibit 19.5. The information required for preparing the firm.

Exhibit 19.5

A Format for the Adjusted Net Income Method 20X0 20X1 20X2 20X3

	20X0	20X1	20X2	20X3	20X4
Source					
Net income after taxes					
Non-cash charges					
(Depreciation, amortisation, etc.)					
Increase in borrowings					
Sale of equity shares					
Miscellaneous					
Uses					
Capital expenditures					
Increase in current assets					
Repayment of borrowings					
Dividend payment					
Miscellaneous					
Surplus/ Deficit					
Opening cash balance					
Closing cash balance					

19.11 CASH REPORTS

Cash reports, providing a comparison of actual developments with forecast figures, are helpful in controlling and revising cash forecasts on a continual basis. Several types of cash reports may be prepared. The important ones are:

- Daily Cash Report The daily cash report shows the opening balance, receipts, payments, and the closing balance on a daily basis.
- Daily Treasury Report An amplification of the daily cash report, the daily treasury report provides a comprehensive picture of changes in cash, marketable securities, debtors, and creditors.
- Monthly Cash Report This report shows the actual cash receipts and payments on a monthly basis. The actuals are compared with the budgeted figures and variances calculated.

19.12 CASH COLLECTION AND DISBURSEMENT

W e talked about a firm's cash balance in general terms. Let us now learn about more precise measures of cash balance and the ways and means of conserving cash. For this purpose we first need to understand what float means.

Float

The cash balance shown by a firm on its books is called the book, or ledger, balance whereas the balance shown in its bank account is called the available, or collected, balance. The difference between the available balance and the ledger balance is referred to as the float. There are two kinds of float viz., disbursement float and collection float. Cheques issued by a firm create disbursement float. For example, suppose that Bharat Company has a book balance as well as available balance of Rs.4 million with its bank. State Bank of India, as on

March 31. On April 1 it pays Rs. 1 million by cheque to one of its suppliers and hence reduces its book balance by Rs. 1 million. State Bank of India, however, will not debit Bharat Company account till the cheque has been presented for payment on, say, April 6. Until that happens the firm's available balance is greater than its book balance by Rs. 1 million. Hence, between April 1 and April 6 Bharat Company has a disbursement float of Rs. 1 million.

Disbursement float = Firm's available balance - Firm's book balance

= Rs.4 million - Rs.3 million

```
= Rs.1 million
```

Cheques received by a firm lead to collection float. For example, suppose that Bharat Company has a book balance as well as available balance of Rs.5 million as on April 30. On May 1 Bharat Company receives a cheque for Rs.1.5 million from a customer which it deposits in the bank. It increases its book balance by Rs.1.5 million. However, this amount is not available to Bharat Company until its bank presents the cheque to the customer's bank and receives payment on, say. May 5. So, between May 1 and May 5 Bharat Company has a collection float of - Rs.1.5 million.

Collection float = Firm's available balance - Firm's book balance

= Rs.5.0 million - Rs.6.5 million

= - Rs.1.5 million

The **net float** is the sum of disbursement float and collection float. It is simply the difference between the firm's available balance and its book balance. If the net float is positive (negative)

it means that the available balance is greater (lesser) than the book balance. Since what matters is the available balance, as a financial manager you should try to maximise the net float. This means that you should strive to speed up collections and delay disbursements. **Speeding up Collections**

The collection time comprises mailing time, cheque processing delay, and the bank's availability delay as shown below:



When a company receives payments through cheques that arrive by mail, all the three components of collection time are relevant. To speed up collection, companies often use lockboxes and concentration banking which are essentially systems for expeditious decentralised collection.

Lock Boxes

Under a lock box system, customers are advised to mail their payments to special post office boxes called lockboxes, which are attended to by local collecting banks, instead of sending them to corporate headquarters.

The local bank collects the cheques from the lock box once or more a day, deposits the cheques directly into the local bank account of the firm, and furnishes details to the firm. Thus the lock box system (i) cuts down the mailing time, because cheques are received at a nearby post office instead of at corporate headquarters, (ii) reduces the processing time because the company does not have to open the envelopes and deposit the cheques for collection, and (iii) shortens the availability delay because the cheques are typically drawn on local banks.

When is it worthwhile to have a lock box? The answer depends on the costs and benefits of maintaining the lock box. Suppose that your company is thinking of setting up a lock box. You gather the following information:

Average number of daily payments	:	50
Average size of payment	:	Rs.8000
Savings in mailing and processing time	:	2 days
Annual rental for the lock box	:	Rs.3000
Bank charges for operating the lock box	:	Rs.72,000
Interest rate	:	15 percent
The lock box will increase your company's co	ollecte	ed balance by:
50 items a day \times Ks.8,000 per item \times 2 da	ays sa	1000 = 10000000000000000000000000000000
The annual benefit in the form of interest sav	ing o	n account of this is:
$Rs.800,000 \times 0.15 = Rs.120,000$		

The annual cost of the lock box is:

Rs.3,000 (rental) + Rs.72,000 (bank charges) = Rs.75,000

Since the interest saving exceeds the cost of the lock box, it is advantageous to set up the lock box. More so because your company also saves on the cost of processing the cheques internally.

Concentration Banking

In this system, the company asks its customers in a particular area to send payments to a local branch office rather than to the corporate headquarters. The cheques received by the local branch office are deposited for collection into a local bank account. Surplus funds from various local bank accounts are transferred regularly (mostly daily) to a concentration account at one of the company's principal banks. For effecting the transfer, several options are available.

With the vast network of branches set up by banks, regional/ local collection centres can be easily established. To ensure that the system of collection works according to plan, it is helpful to periodically audit the actual transfers by the collecting banks and see whether they are in conformity with the instructions given. Concentration banking can be combined with lock box arrangement to ensure that the funds are pooled centrally as quickly as possible.

Delaying Payments

Just as a firm can increase its net float by speeding up collections, it can also do so by slowing down disbursements. A common temptation is to increase the mail time. For example, Bharat Company may pay its suppliers in Cochin with cheques sent from its Delhi office and its suppliers in Ludhiana with cheques mailed from its Chennai office. However, such gimmicks provide only a short-term benefit and finally turn out to be selfdefeating when suppliers discover the ploy and adjust their price and credit terms appropriately. Or, they may insist on payment by cheques payable at par at all the branches of the bank.

While maximising disbursement float is a questionable practice, a firm can still conserve its cash resources by properly controlling its payments. The following may be done in this respect.

- Ensure that payments are made only when they fall due and not early.
- Centralise disbursements. This helps in consolidating funds at the head office, scheduling payments more effectively, reducing unproductive cash balances at regional/ local offices, and investing funds more productively.
- Arrange with suppliers to set the due dates of their bills to match with company's receipts. Synchronisation of cash outflows with cash inflows helps a company to get greater mileage from its cash resources.

19.13 ELECTRONIC DATA INTERCHANGE

Electronic data interchange (EDI) refers to direct, electronic exchange of information between various parties. Financial EDI, or FEDI, involves electronic transfer of information and funds between transacting parties. FEDI leads to elimination of paper invoices, paper cheques, mailing, handling, and so on. Under FEDI, the seller sends the bill electronically to the buyer, the buyer electronically authorises its bank to make payment, and the bank transfers funds electronically to the account of the seller at a designated bank. The net effect is that the time required to complete a business transaction is shortened considerably thereby virtually eliminating the float. Currently one of the drawbacks of FEDI is that it is expensive and complex to set up, more so in a country like India. Further, many parties may not be ready or willing to participate in it. However, with the advancements in technology and the growth of internet, e-commerce costs will fall significantly. This will induce more parties to participate in FEDI. As Ross Westerfield and Jordan say: "As the use of FEDI increases (which it will), float management will evolve to focus much more on issues surrounding computerised information exchange and funds transfer."

Electronic Funds Transfer

The use of cheques is declining as consumers increasingly prefer to pay through credit or debit cards. Recurring expenses such as utility bills, rental payments, and so on are increasingly being paid electronically. Payments between companies in the U.S. is now typically made though electronic funds transfer (EFT). In India, the Reserve Bank of India introduced the RBI Electronic Funds Transfer (EFT) scheme to enable banks offer EFT facilities to their customers. Under this arrangement money gets transferred on the same day or next day, depending on the time the transfer order is placed. EFT automates record keeping, reduces the cost of transaction, and enables companies to get their funds earlier.

RTGS, which stands for Real Time Gross Settlement, is the fastest mode of transfer of funds in India at present. Under this, amounts are transferred by one bank to another, through the RBI, without any waiting period and without bunching with any other transaction. This facility is usually available for about four hours on a working day for amounts of Rs.2 lakhs and above. The recipient bank has to credit the beneficiary's account within two hours of receiving the transfer message.

19.14 OPTIMAL CASH BALANCE

If a firm maintains a small cash balance, it has to sell its marketable securities (and perhaps buy them later) more frequently than if it holds a large cash balance. Hence the trading or transaction costs will tend to diminish if the cash balance becomes larger. However, the opportunity costs of maintaining cash rise as the cash balance increases. Exhibit 24.6 presents graphically the tradeoff between the trading costs and opportunity costs. As shown in this figure, the total costs of holding cash (which consist of trading costs and opportunity costs) are at a minimum when the size of cash balance is C*". This represents the optimal cash.

Exhibit 19.6 Optimal Cash Balance



19.15 INVESTMENT OF SURPLUS FUNDS

Companies often have surplus funds for short periods of time before they are required for capital expenditures, loan repayment, or some other purpose. Instead of allowing these surplus funds to accumulate in current account where they earn no interest, companies invest them in a variety of short-term instruments like term deposits with banks, money market mutual funds, and so on. Managing the investment of surplus funds is a very important responsibility of the financial manager. This has become more so in recent years, thanks to higher corporate liquidity and wider range of investment options.

Investment Portfolio: Three Segments It may be useful to divide a firm's short-term investment portfolio into three (not necessarily equal) segments: ready cash segment, controllable cash segment, and free cash segment.

The **ready cash segment** represents a reserve for the company's cash account. It is meant to augment the cash resources of the company to meet unanticipated operational needs. Investments in this segment must necessarily be highly liquid in nature.

The **controllable cash segment** represents that part of the investment portfolio which is meant to meet the needs of knowable outflows like taxes, dividend, interest payments, and repayments of borrowings. Ideally, investments in this segment must be matched in size and maturity to known future outflows.

The **free cash segment** represents that part of the investment portfolio which is meant neither to augment unforeseen current cash needs nor to meet known future outflows. It essentially represents surplus funds with the firm which has been invested in short-term instruments to generate income, without much concern for liquidity or maturity.

19.16 CRITERIA FOR EVALUATING INVESTMENT INSTRUMENTS

Safety, liquidity, yield, and maturity are the most important criteria for evaluating various investment instruments.

- Safety Perhaps the most important criterion, safety refers to the probability of getting back the amount invested. Treasury bills may be regarded as the safest of all the instruments as they represent the obligations of the government. The safety of the other instruments depends on the type of the instrument and the issuer. A high degree of safety is essential for an instrument to be considered for inclusion in the short-term investment portfolio of the firm.
- Liquidity The liquidity of an instrument refers to the ability of the investor to convert it into cash on short notice without incurring a loss. An instrument may be quite safe if it is held till maturity, but it may not be possible to sell it prematurely without suffering a loss. For a traded instrument, a large and active secondary market ensures liquidity. For a non-traded instrument, liquidity is high if the penalty for premature liquidation is negligible.
- **Yield** The yield of an instrument is the return earned from it by way of interest, dividend, and capital appreciation. Some instruments like Treasury bills and commercial paper do not pay interest, but they are sold at a discount and redeemed at face value. Yield has to be measured in post-tax terms, taking into account the tax rate applicable to the returns earned by the investment instrument.

• **Maturity** Maturity refers to the life of the instrument. While some instruments (like Treasury bills) have fixed original maturities, others (like certificates of deposit) can have tailormade maturity. Generally, the longer the maturity, the greater the yield.

Investment Options

For deploying their surplus funds, the major options used by the corporates in India are fixed deposits with banks and mutual fund schemes (in particular, money market schemes); the minor options used are Treasury bills, G-secs, commercial paper, certificates of deposit, intercorporate deposits, and ready forwards. A brief discussion of various options follows.

- Fixed Deposits with Banks Banks typically accept term deposits for periods ranging from 7 days to 10 years. Interest rates vary depending on the period of maturity, prevailing economic conditions and the bank's own funds position. For example, in January 2011, Bank of Baroda offered interest of 2.5 percent on term deposits of 7 days and 8.5 percent on term deposits maturing between 3 and 10 years.
- **Mutual Fund Schemes** A variety of schemes are offered by mutual funds. Based on the investment policy, the mutual fund schemes may be broadly classified as follows:

Equity Schemes : The corpus of an equity scheme is invested substantially (80-95 percent) in equity or equity related instruments. The balance may be in debt instruments.

Balanced schemes : A balanced scheme, as its name suggests, invests its corpus across two broad asset classes, viz., equity and debt in a more or less balanced manner.

Debt schemes : A debt scheme invests its corpus primarily in debt instruments. Some debt schemes may have a small exposure to equities.

For investing short-term surpluses perhaps the most popular schemes are debt schemes because of their low or nil exposure to equities. Within the category of debt schemes, money market schemes, also called liquid schemes, seem to be more appropriate. The corpus of a money market schemes is invested in instruments such as Treasury bills, commercial paper, certificates of debt, and call and notice money. Money market instruments have negligible interest risk exposure (thanks to their short maturity) as well as credit risk exposure. The principal value of a unit in a money market scheme remains stable, though the periodic income may vary depending on the conditions in the money market.

Money market schemes are very convenient for firms that do not have in-house expertise for managing short-term surpluses. They offer safety of principal, nearinstantaneous liquidity, and a post-tax return that is generally higher than what short term bank deposits provide.

Treasury Bills Treasury bills (T - bills) are short-term obligations of the Government of India. The RBI which issues T - bills on behalf of the Government of India, auctions 14days and 91-days T-bills every Friday and 184-days and 364 days T-bills every alternative Wednesday. T- bills are sold through a uniform price auction (Dutch auction). The pre-tax yield on such an instrument is calculated as follows;

 $\frac{\text{Face value} - \text{Market Price}}{\text{Market Price}} \times \frac{360}{\text{Balance maturity period}}$

To illustrate, a Treasury Bill has a face value of Rs.100,000 and a balance maturity period of 91 days. Its market price is Rs.98.500. So, its pre-tax yield works out to:

$$\frac{100,000 - 98,500}{98,500} \times \frac{360}{91} = 6.02 \text{ percent}$$

Since this return is deemed as ordinary income, the post-tax return would be: 6.02 (1 – marginal tax rate).

Though the yield on Treasury bills is somewhat low, they have appeal for the following reasons: (i) They can be transacted readily as they are issued in bearer form. (ii) There is a very active secondary market for Treasury bills and the Discount and Finance House of India is a major market maker. (iii) Treasury bills are virtually risk-free.

G-Secs G-Secs or government securities are debt instruments issued by the central and state governments. These securities have maturities ranging from 3-20 years and earn a yield between 7.5 and 9.5 percent. G-secs that have a residual maturity of 1 to 2 years may be suitable for parking short-term surpluses, as they carry limited price risk.

Commercial Paper Commercial paper represents short-term unsecured promissory notes issued by firms that are generally considered to be financially strong. Commercial paper usually has a maturity period of 90 days to 180 days. It is sold at a discount and redeemed at par. Hence the implicit rate is a function of the size of discount and the period of maturity. Commercial paper is either directly placed with investors or sold through dealers. Commercial paper does not presently have a well developed secondary market in India. The main attraction of commercial paper is that it offers an interest rate that is typically higher than that offered by Treasury bills or certificates of deposit. However, its disadvantage is that it does not have an active secondary market. Hence, it makes sense for firms that plan to hold these till maturity.

Certificates of Deposits A certificate of deposit (CD) is issued by a bank and has a maturity value of Rs.I lakh. It has a maturity period ranging between 15 days and I year and it carries a fixed rate or floating rate of interest. CDs are a popular form of short-term investment for companies for the following reasons:

(i) Banks are normally willing to tailor the denominations and maturities to suit the needs of the investors, (ii) CDs are transefable. (iii) CDs are generally risk-free, (iv) CDs generally offer a higher rate of interest than Treasury bills or term deposits.

Inter-Corporate Deposits A deposit made by one company with another, normally for a period of up to six months, is referred to as an inter-corporate deposit. Such deposits are usually of three types:

- 1. **Call Deposits** In theory, a call deposit is withdrawable by the lender on giving a day's notice. In practice, however, the lender has to wait for at least three days.
- 2. **Three-month Deposits** More popular in practice, these deposits are taken by borrowers to tide over a short-term cash inadequacy.
- 3. **Six-month Deposits** Normally, lending companies do not extend deposits beyond this time frame. Such deposits are usually made with first class borrowers.

As inter-corporate deposits represent unsecured borrowings, the lending company must satisfy itself about the creditworthiness of the borrowing firm. In addition, it must make sure that it adheres to the following requirements, as stipulated by Section 370 of the

Company's Act: (i) A company cannot lend more than 10 percent of its net worth (equity plus free reserves) to any single company, (ii) The total lending of a company cannot exceed 30 percent of its net worth without the prior approval of the central government and a special resolution permitting such excess lending.

Ready Forwards A government security dealer or some other organisation may do a repurchase agreement, also called deal with a company interested in deploying surplus funds on a short-term basis. Under this arrangement, the dealer sells and repurchases the same securities (this means that the company, in turn buys and sells securities) at prices determined before hand. A 'ready forward'. A ready forwards are permitted only in certain securities. The company earns a return in the form of a price difference (between the buying and selling rates) and not in the form of an interest income. From the tax point of view, however, both the incomes are treated alike. The return on a ready forward deal is closely linked to money market conditions. It must be noted that the money market tends to be tight during the busy season as well as the time of year closing.

19.17 TECHNIQUES OF CASH MANAGEMENT

Keith V. Smith' says that financial managers can consider a series of seven strategies for handling the excess cash balance with the firm.

1. **Do Nothing** The financial manager simply allows surplus liquidity to accumulate in the current account. This strategy enhances liquidity at the expense of profits that could be earned from investing surplus funds.

2. Make Ad Hoc Investments The financial manager makes investments in a somewhat ad hoc manner. Such a strategy makes some contribution, though not the optimal contribution, to profitability without impairing the liquidity of the firm. It is followed by firms which cannot devote enough time and resources to management of securities.

3. Ride the Yield Curve This is a strategy to increase the yield from a portfolio of marketable securities by betting on interest rate changes. If the financial manager expects that interest rates will fall in the near future, he would buy longer-term securities as they appreciate more, compared to shorter-term securities. On the other hand, if the financial manager believes that the interest rates will rise in the near future, he would sell long term

securities. This strategy hinges on the assumption that the financial manager has superior interest rate forecasting ability. Empirical evidence, however, suggests that it may be futile to try to do better than the average. The expected higher return is almost invariably accompanied by higher risk.

4. **Develop Guidelines** A firm may develop a set of guidelines which may reflect the view of the management towards risk and return. Examples of such guidelines are: (i) Do not speculate on interest rate changes, (ii) Hold marketable securities till they mature, (iii) Do not put more than a certain percentage of liquid funds in a particular security or type of security, (iv) Minimise transaction costs. Using a set of guidelines which supposedly reflect conventional wisdom often provides a 'satisficing' solution and not an 'optimal' solution. Yet they are found useful by firms which want liquidity management to be orderly and systematic.

5. Utilise Control Limits There are some models of cash management which assume that cash inflows and outflows occur randomly over time. Based on this premise, these models define the upper and lower control limits. When the cash balance touches the upper limit the model prescribes that a certain amount should be invested in marketable securities. By the same token, when the cash balance hits the lower limit the model says that a certain amount of marketable securities should be liquidated to augment the cash resources of the firm. Of course, a control limit model does not specify which securities should be bought or sold. Hence, such a model is essentially a partial device for managing liquidity.

6. Manage with a Portfolio Perspective According to the portfolio theory there are two key steps in portfolio selection.

- a. **Define the efficient frontier** The efficient frontier represents a collection of all efficient portfolios. A portfolio is efficient if (and only if) there is no alternative with (i) the same expected return and a lower standard deviation, or (ii) the same standard deviation and a higher expected return, or (iii) a higher expected return and a lower standard deviation,
- b. *Select the optimal portfolio* The optimal portfolio is that point on the efficient frontier which enables the investor to achieve the highest attainable

level of utility. It is found at the point of tangency between the efficient frontier and a utility indifference curve.

Although portfolio theory has been developed in terms of explicit formulae for risk and return, in the present context it may be viewed as a general approach that emphasises the principle of diversification. The portfolio theory, of course, does not provide much guidance on how funds should be switched from the cash account to marketable securities and vice versa. Hence, it is also a partial approach to liquidity management.

7. Follow a Mechanical Procedure The financial manager may switch funds between the cash account and marketable securities using a mechanical procedure. Some models have been developed that provide rules for such mechanical procedures. The success of such a strategy depends on how well the behaviour of the firm's cash flows conforms with the assumptions of the model. It appears that, in practice, mechanical procedures are of rather limited use.

19.18 SUMMARY

Finally to sum up, Inventory plays an important role in smooth functioning of the business without any hindrances as whether in manufacturing, distribution, retail, or services, is to specify (1) when items should be ordered and (2) how large the order should be. Many firms are tending to enter into longer-term relationships with vendors to supply their needs for perhaps the entire year. This changes the "when" and "how many to order" to "when" and "how many to deliver.

19.19 GLOSSARY

- **Inventory:** Inventory is the stock of any item or resource used in an organisation
- Holding (or carrying) costs:- The costs for storage facilities, handling, insurance, pilferage, breakage, obsolescence, depreciation, taxes, and the opportunity cost of capital
- **Ordering costs:-** These costs refer to the managerial and clerical costs to prepare the purchase or production order.

• Economic order Quantity:- Economic order quantity (EOQ) is the order quantity of inventory that minimises the total cost of inventory management

19.20 SELFASSESSMENT QUESTIONS

After reading this chapter students must be able to answer following questions:

Q1. What is Inventory Cost ?

Q2. What are the various techniques of Inventory management ?

Q3. What are the challenges of Inventory Management ?

19.21 LESSON AND EXERCISE

Q1. Explain ABC analysis of inventory management.

Q1. Difference between re-order level and re-order quantity.

19.22 SUGGESTED READINGS

 Fundamental of Financial Management
Fundamental of Financial Management
Fundamental of Financial Management
Financial Management
Financial Management
P K Jain M Y Khan

WORKING CAPITAL MANAGEMENT

UNIT-IV

Lesson No. 20

RECEIVABLES MANAGEMENT-CONCEPT; CREDIT STANDARDS; CREDIT ANALYSIS; CREDIT TERMS; CRITICAL APPRAISAL OF SHORTTERM SOURCES OF FINANCE; MANAGEMENT OF EARNINGS

STRUCTURE

- 20.1 Introduction
- 20.2 Objectives
- 20.3 Concept of receivables management
- 20.4 Cost of maintaining debtors
- 20.5 Factors affecting size of receivables
- 20.6 Significance and purpose of receivables management
- 20.7 Dimensions of receivables management
- 20.8 Management of Earnings
- 20.9 Need for earnings management
- 20.10 Techniques of earnings management
- 20.11 Objectives of earnings management
- 20.12 How to control earnings management
- 20.13 Credit terms or Terms of payment

20.14 Credit policy variables

- 20.14.1 Credit Standard
- 20.14.2 Credit Period
- 20.14.3 Cash Discount
- 20.14.4 Collection Effort

20.15 Credit analysis or Credit evaluation

20.16 Short term source of finance – The money market

20.17 Critical appraisal of short term sources of finance

20.18 Summary

20.19 Glossary

20.20 Self assessment questions

20.21 Lesson end exercise

20.22 Suggested Readings

20.1 INTRODUCTION

A sound managerial control requires proper management of liquid assets and inventory. These assets are a part of working capital of the business. An efficient use of financial resources is necessary to avoid financial distress. Receivables result from credit sales. A concern is required to allow credit sales in order to expand its sales volume. It is not always possible to sell goods on cash basis only. Sometimes, other concerns in that line might have established a practice of selling goods on credit basis. Under these circumstances, it is not possible to avoid credit sales without adversely affecting sales. The increase in sales is also essential to increase profitability. After a certain level of sales the increase in sales will not proportionately increase production costs. The increase in sales will bring in more profits. Thus, receivables constitute a significant portion of current assets of a firm. But, for investment in receivables, a firm has to incur certain costs. Further, there is a risk of bad debts also. It is, therefore, very necessary to have a proper control and management of receivables. Earnings management is the creative use of different accounting techniques to make financial statements look better. This can be a very hard concept to grasp simply because there is a fine line between legal earnings management and fraud. Now, why would someone want to take the chance to even participate in earnings management? That question can be answered in one acronym: WISE. WISE stands for Window dressing, Internal targets, income Smoothing, and External expectations.

Window dressing refers to a company dressing up the financial statements to make them look better for financial statement users. Internal targets are drivers of earnings management when a company has set its own internal goals and wants to be sure to meet them. Income smoothing occurs when companies choose to smooth out spikes and dips in income. External expectations occur when management predicts a certain degree of profits for investors and investors now expect it.

There are five common techniques that are used to manage earnings. The big bath technique occurs when a company has a 1-time, non-recurring event happen and expenses associated with that event are inflated. Cookie jar reserves occur when expenses are based on estimates. Operating activities refers to managers planning certain events to occur during certain periods. Materiality refers to the degree that a financial transaction will impact the overall financial statements. Revenue recognition refers to the manipulation of when revenue is recognized.

No matter what earnings management technique is used, the bottom line is this: accounting professionals must always follow the guidelines set forth in the law and be careful that any stretches do not break the limits of the law.

20.2 OBJECTIVES

After studying this lesson, you will be able to:

- explain the meaning of receivables management;
- determine costs of maintaining debtors;
- understand the importance receivables management;
- Express understanding of earnings management;

- Enumerate reasons that companies use earnings management;
- understand the various credit terms and credit standards;
- define credit analysis.

20.3 CONCEPT OF RECEIVABLES MANAGEMENT

Meaning of receivables :

Receivables, also termed as trade credit or debtors are component of current assets. When a firm sells its product in credit, account receivables are created. Account receivable are the money receivable in some future date for the credit sale of goods and services at present. These days, most business transactions are in credit. Most companies, when they face competition, use credit sales as an important tool for sales promotion. As a sales promotion tool, credit sale enhances firm's sales revenue and ultimately pushes up the profitability. But after the credit sale has been made, the actual collection of cash may be delayed for months. As these late payments stretch out over time, they may cause substantial drop in a company's profit margin. Since the extension of credit involves both cost and benefits, the firm's manager must be able to measure them to determine the ultimate effect of credits sales. Receivables or debtors have three distinct characteristics:

- (i) It involves risk which should carefully be studied since cash sales are riskless whereas, at the time of credit sales, cash is yet to be received.
- (ii) It is based on present economic value. At the time of sale the economic value of goods passes immediately, whereas, the seller expects an equivalent benefit at a later date.
- (iii) It implies futurity. The value of goods or services received by the buyer will be payable by him at a future date.

No doubt debtors/receivables play a significant role in the total current asset composition since their position is next to inventories. In India, they form about one-third of total current asset.

Objectives of debtors:

It has already been stated above that accounts receivables/debtors are generated which is collected at a future date only when the firm grants credit against an ordinary sale of goods or services without receiving cash. Credit sale is an essential part of the present competitive economic system. It is granted in order to increase the volume of sales. As such, debtors/receivables, which are created out of credit sales, are considered as a marketing tool for increasing sales. It may be mentioned in this respect that credit which is granted to the customer is done in the ordinary course of the business, i.e., on an open account. In other words, there will be no formal acknowledgement of debt obligation. But extension of credit involves cost and risk.

Therefore, management should weigh the benefits against cost. As such, the objective of debtors/receivables management is 'to promote sales and profits until that point is reached (i.e., optimum point) where the return on investment in further funding of receivables is less than the cost of funds raised to finance that additional credit (i.e., cost of capital)'.

Concept of receivables management :

Receivables represent amounts owed to the firm as a result of sale of goods or services in the ordinary course of business. These are claims of the firm against its customers and form part of its current assets. Receivables are also known as accounts receivables, trade receivables, customer receivables or book debts. The receivables are carried for the customers. The period of credit and extent of receivables depends upon the credit policy followed by the firm. The purpose of maintaining or investing in receivables is to meet competition, and to increase the sales and profits.

In this prospective, receivables management can be defined as the aspect of a firm's current assets management, which is concerned with determining optimum credit policy associated to a firm, such that the benefit from extension of credit is greater than the cost of maintaining investment in accounts receivables.

Thus, receivables management is the process of making decisions relating to investment in trade debtors. We have already stated that certain investment in receivables is necessary to increase the sales and the profits of a firm. But at the same time investment in this asset involves cost considerations also. Further, there is always a risk of bad debts too. Thus, the objective of receivables management is to take a sound decision as regards investment in debtors. In the words of Bolton, S.E., the objectives of receivables management is "to promote sales and profits until that point is reached where the return on investment in further funding of receivables is less than the cost of funds raised to finance that additional credit."

20.4 COST OF MAINTAINING DEBTORS

The allowing of credit to customers means giving funds for the customer's use. The specific cost arising out of examination of credit which are related to the determination of the objectives of receivable management are:

- 1. Collection costs;
- 2. Capital costs/cost of financing;
- 3. Delinquency costs; and
- 4. Default costs.

1. Collection costs:

A proper collection of receivables is essential for receivables management. The customers who do not pay the money during a stipulated credit period are sent reminders for early payments. Some persons may have to be sent for collection these amounts. These costs are those which are to be incurred by a firm in order to collect the amount on account of credit sales, i.e., these expenses would not be incurred if the firm does not sell goods on credit, e.g., additional expenses incurred for the maintenance of credit and collection department, expenses incurred for obtaining information about credit-worthiness of potential customers.

2. Capital costs/ cost of financing:

When goods and services are provided on credit then concern's capital is allowed to be used by the customers. The receivables are financed from the funds supplied by shareholders for long term financing and through retained earnings. The concern incurs some cost for colleting funds which finance receivables. The amounts which are locked up in debtors on account of credit sales may be financed from one of the following three sources:

- (i) Share capital;
- (ii) Debt capital (long and short-term); and
- (iii) Retained earnings.

Illustration:

A firm sells its article at a profit of 25% on cost and the average balance of debtors amounts to Rs. 8,00,000. Investment in debtors is being financed by bank borrowings at 15%.

Ascertain the cost of financing average debtors.

Solution :

Ratio of Cost of Sales	= Sales - Profit 100	×	$\frac{100-20}{100}$ (since 25% on cost = 20% on sales)
	$=\frac{80}{100}$		
So, Investment in Average Debtors			Debtors $\times \frac{Cost}{100}$
		=	$\frac{\text{Rs. 8,00,000}}{100} \times 80$
		=	Rs. 6,40,000
Cost of Capital : 15%			
Hence, cost of financing	Average Debtors :		
Rs. 6,40,000 × $\frac{15}{100}$	= Rs. 96,000 annually.		

3. Delinquency costs:

When the period of payment becomes due (i.e., after the expiry of the credit period) but is not received from the customers, the same is known as delinquency cost.

It includes:

- (i) Blocking up of funds/cost of financing for an extended period; and
- (ii) Cost of extra steps to be taken to collect the over-dues, e.g., reminders, legal charges etc.

4. Default costs:

Sometimes the firms may not collect the over-dues from the customers since they are unable to pay. such amounts which the customers fail to pay are known as bad debts and are to be written-off accordingly since the amounts will not be realised in future. Such costs are termed as 'Default Costs'. Although the firms make proper provision against bad debts but one cannot altogether rule out this cost. Default cost will increase if the amount of credit sales is increased in proportion to cash sales.

20.5 FACTORS AFFECTING SIZE OF RECEIVABLES

Besides sales, a number of other factors also influence the size of receivables. The following factors directly and indirectly affect the size of receivables.

- (1) Size of credit sales: The volume of credit sales is the first factor which increases or decreases the size of receivables. If a concern sells only on cash basis as in the case of Bata Shoe Company, then there will be no receivables. The higher the part of credit sales out of total sales, figures of receivables will also be more or vice versa.
- (2) **Credit policies:** A firm with conservative credit policy will have a low size of receivables while a firm with liberal credit policy will be increasing this figure. If collections are prompt then even if credit is liberally extended the size of receivables will remain under control. In case receivables remain outstanding for a longer period, there is always a possibility of bad debts.
- (3) Terms of trade: The size of receivables also depends upon the terms of trade. The period of credit allowed and rates of discount given are linked with receivables. If credit period allowed is more then receivables will also be more. Sometimes trade policies of competitors have to be followed otherwise it becomes difficult to expand the sales.
- (4) Expansion plans: When a concern wants to expand its activities, it will have to enter new markets. To attract customers, it will give incentives in the form of credit facilities. The period of credit can be reduced when the firm is able to get permanent customers. In the early stages of expansion more credit becomes essential and size of receivables will be more.

- (5) Relation with profits: The credit policy is followed with a view to increase sales. When sales increase beyond a certain level the additional costs incurred are less than the increase in revenues. It will be beneficial to increase sales beyond the point because it will bring more profits. The increase in profits will be followed by an increase in the size of receivables or vice-versa.
- (6) **Credit collection efforts:** The collection of credit should be streamlined. The customers should be sent periodical reminders if they fail to pay in time. On the other hand, if adequate attention is not paid towards credit collection then the concern can land itself in a serious financial problem. An efficient credit collection machinery will reduce the size of receivables.
- (7) Habits of customers: The paying habits of customers also have bearing on the size of receivables. The customers may be in the habit of delaying payments even though they are financially sound. The concern should remain in touch with such customers and should make them realise the urgency of their needs.

20.6 SIGNIFICANCE AND PURPOSE OF RECEIVABLE MANAGEMENT

The basic purpose of firm's receivable management is to determine effective credit policy that increases the efficiency of firm's credit and collection department and contributes to the maximization of value of the firm. The specific purposes of receivable management are as follows:

- 1. To evaluate the credit worthiness of customers before granting or extending the credit.
- 2. To minimize the cost of investment in receivables.
- 3. To minimize the possible bad debt losses.
- 4. To formulate the credit terms in such a way that results into maximization of sales revenue and still maintaining minimum investment in receivables.
- 5. To minimize the cost of running credit and collection department.
- 6. To maintain a trade off between costs and benefits associated to credit policy.

20.7 DIMENSIONS OF RECEIVABLES MANAGEMENT

Receivables management involves the careful consideration of the following aspects:

- 1. Forming of credit policy.
- 2. Executing the credit policy.
- 3. Formulating and executing collection policy.

1. Forming of credit policy

For efficient management of receivables, a concern must adopt a credit policy. A credit policy is related to decisions such as credit standards, length of credit period, cash discount and discount period, etc.

(a) Quality of trade accounts of credit standards: The volume of sales will be influenced by the credit policy of a concern. By liberalising credit policy the volume of sales can be increased resulting into increased profits. The increased volume of sales is associated with certain risks too. It will result in enhanced costs and risks of bad debts and delayed receipts. The increase in number of customers will increase the clerical work of maintaining the additional accounts and collecting of information about the credit worthiness of customers. There may be more bad debt losses due to extension of credit to less worthy customers. These customers may also take more time than normally allowed in making the payments resulting into tying up of additional capital in receivables. On the other hand, extending credit to only credit worthy customers will save costs like bad debt losses, collection costs, investigation costs, etc. The restriction of credit to such customers only will certainly reduce sales volume, thus resulting in reduced profits.

A finance manager has to match the increased revenue with additional costs. The credit should be liberalised only to the level where incremental revenue matches the additional costs. The quality of trade accounts should be decided so that credit facilities are extended only upto that level. The optimum level of investment in receivables should be where there is a trade off between the costs and profitability. On the other hand, a tight credit policy increases the liquidity of the firm. On the other hand, a tight credit policy increases the liquidity of the firm. Thus, *optimum level* of investment in receivables is achieved at a point where there is a trade off between cost, profitability and liquidity.

- (b) Length of credit period: Credit terms or length of credit period means the period allowed to the customers for making the payment. The customers paying well in time may also be allowed certain cash discount. A concern fixes its own terms of credit depending upon its customers and the volume of sales. The competitive pressure from other firms compels to follow similar credit terms, otherwise customers may feel inclined to purchase from a firm which allows more days for paying credit purchases. Sometimes more credit time is allowed to increase sales to existing customers and also to attract new customers. The length of credit period and quantum of discount allowed determine the magnitude of investment in receivables.
- (c) Cash discount: Cash discount is allowed to expedite the collection of receivables. The concern will be able to use the additional funds received from expedited collections due to cash discount. The discount allowed involves cost. The discount should be allowed only if its cost is less than the earnings from additional funds. If the funds cannot be profitably employed then discount should not be allowed.
- (d) *Discount period*: The collection of receivables is influenced by the period allowed for availing the discount. The additional period allowed for this facility may prompt some more customers to avail discount and make payments. This will mean additional funds released from receivables which may be alternatively used. At the same time the extending of discount period will result in late collection of funds because those who were getting discount and making payments as per earlier schedule will also delay their payments.

2. Executing credit policy

After formulating the credit policy, its proper execution is very important. The evaluation of credit applications and finding out the credit worthiness of customers should be undertaken.

(a) **Collecting credit information:** The first step in implementing credit policy will be to gather credit information about the customers. This information should be adequate enough so that proper analysis about the financial position of the customers is possible. This type of investigation can be undertaken only upto a certain limit because it will involve cost.

The sources from which credit information will be available should be ascertained. The information may be available from financial statements, credit rating agencies, reports from banks, firm's records etc. Financial reports of the customer for a number of years will be helpful in determining the financial position and profitability position. The balance sheet will help in finding out the short term and long term position of the concern. The income statements will show the profitability position of concern. The liquidity position and current assets movement will help in finding out the current financial position. A proper analysis of financial statements will be helpful in determining the credit worthiness of customers. There are credit rating agencies which can supply information about various concerns. These agencies regularly collect information about business units from various sources and keep this information upto date. The information is kept in confidence and may be used when required.

Credit information may be available with banks too. The banks have their credit departments to analyse the financial position of a customer.

In case of old customers, business own records may help to know their credit worthiness. The frequency of payments, cash discounts availed, interest paid on over due payments etc. may help to form an opinion about the quality of credit.

(b) *Credit analysis*: After gathering the required information, the finance manager should analyse it to find out the credit worthiness of potential customers and also to see whether they satisfy the standards of the concern or not. The credit analysis will determine the degree of risk associated with the account, the capacity of the customer borrow and his ability and willingness to pay.

- (c) Credit decision: After analysing the credit worthiness of the customer, the finance manager has to take a decision whether the credit is to be extended and if yes then upto what level. He will match the creditworthiness of the customer with the credit standards of the company. If customer's creditworthiness is above the credit standards then there is no problem in taking a decision. It is only in the marginal case that such decisions are difficult to be made. In such cases the benefit of extending the credit should be compared to the likely bad debt losses and then decision should be taken. In case the customers are below the company credit standards then they should not be outrightly refused. Rather they should be offered some alternative facilities. A customer may be offered to pay on delivery of goods, invoices may be sent through bank. Such a course help in retaining the customers at present and their dealings may help in reviewing their requests at a later date.
- (d) Financing investments in receivables and factoring: Accounts receivables block a part of working capital. Efforts should be made that funds are not tied up in receivables for longer periods. The finance manager should make efforts to get receivables financed so that working capital needs are met in time. The quality of receivables will determine the amount of loan. The banks will accept receivable of dependable parties only. Another method of getting funds against receivables is their outright sale to the bank. The bank will credit the amount to the party after deducting discount and will collect the money from the customers later. Here too, the bank will insist on quality receivables only. Besides banks, there may be other agencies which can buy receivables and pay cash for them. This facility is known as *factoring*. The factoring may be with or without recourse. It is without recourse then any bad debt loss is taken up by the factor but if it is with recourse then bad debts losses will be recovered from the seller.

Factoring is collection and finance service designed to improve he cash flow position of the sellers by converting sales invoices into ready cash. The procedure of factoring can be explained as follows:

- 1. Under an agreement between the selling firm and factor firm, the latter makes an appraisal of the credit worthiness of potential customers and may also set the credit limit and term of credit for different customers.
- 2. The sales documents will contain the instructions to make payment directly to factor who is responsible for collection.
- 3. When the payment is received by the factor on the due date the factor shall deduct its fees, charges etc and credit the balance to the firm's accounts.
- 4. In some cases, if agreed the factor firm may also provide advance finance to selling firm for which it may charge from selling firm. In a way this tantamount to bill discounting by the factor firm. However factoring is something more than mere bill discounting, as the former includes analysis of the credit worthiness of the customer also. The factor may pay whole or a substantial portion of sales vale to the selling firm immediately on sales being effected. The balance if any, may be paid on normal due date.

Benefits and cost of factoring

A firm availing factoring services may have the following benefits:

- a. Better Cash Flows
- b. Better Assets Management
- c. Better Working Capital Management
- d. Better Administration
- e. Better Evaluation
- f. Better Risk Management

However, the factoring involves some monetary and non-monetary costs as follows:

Monetary costs

- a) The factor firm charges substantial fees and commission for collection of receivables. These charges sometimes may be too much in view of amount involved.
- b) The advance fiancé provided by factor firm would be available at a higher interest costs than usual rate of interest.

Non-Monetary costs

- a) The factor firm doing the evaluation of credit worthiness of the customer will be primarily concerned with the minimization of risk of delays and defaults. In the process it may over look sales growth aspect.
- b) A factor is in fact a third party to the customer who may not feel comfortable while dealing with it.
- c) The factoring of receivables may be considered as a symptom of financial weakness.

Factoring in India is of recent origin. In order to study the feasibility of factoring services in India, the Reserve Bank of India constituted a study group for examining the introduction of factoring services, which submitted its report in 1988. On the basis of the recommendations of this study group the RBI has come out with specific guidelines permitting a banks to start factoring in India through their subsidiaries. For this country has been divided into four zones. In India the factoring is still not very common. The first factor i.e. The SBI Factor and Commercial Services Limited started working in April 1991. The guidelines for regulation of a factoring are as follows:

- (1) A factor firm requires an approval from Reserve Bank of India.
- (2) A factor firm may undertake factoring business or other incidental activities.
- (3) A factor firm shall not engage in financing of other firms or firms engaged in factoring.

3. Formulating and executing collection policy

The collection of amounts due to the customers is very important. The collection policy the termed as strict and lenient. A strict policy of collection will involve more efforts on collection. Such a policy has both positive and negative effects. This policy will enable early collection of dues and will reduce bad debt losses. The money collected will be used for other purposes and the profits of the concern will go up. On the other hand a rigorous collection policy will involve increased collection costs. It may also reduce the volume of sales. A lenient policy may increase the debt collection period and more bad debt losses. A customer not clearing the dues for long may not repeat his order because he will have to pay earlier dues first, thus causing.

The objective is to collect the dues and not to annoy the customer. The steps should be like (i) sending a reminder for payments (ii) Personal request through telephone etc. (iii) Personal visits to the customers (iv) Taking help of collecting agencies and lastly (v) Taking legal action. The last step should be taken only after exhausting all other means because it will have a bad impact on relations with customers.

20.8 MANAGEMENT OF EARNINGS

Earnings are the profits of a company. Investors and analysts look to earnings to determine the attractiveness of a particular stock. Companies with poor earnings prospects will typically have lower share prices than those with good prospects. Remember that a company's ability to generate profit in the future plays a very important role in determining a stock's price.

That said, earnings management is a strategy used by the management of a company to deliberately manipulate the company's earnings so that the figures match a predetermined target. This practice is carried out for income-smoothing. Thus, rather than having years of exceptionally good or bad earnings, companies will try to keep the figures relatively stable by adding and removing cash from reserve accounts (known colloquially as "cookie jar" accounts).

Abusive earnings management is deemed by the Securities & Exchange Commission to be "material and intentional misrepresentation of results." When income smoothing becomes excessive, the SEC may issue fines. Unfortunately, there are not much individuals can do to suss out abuses. Accounting laws for large corporations are extremely complex, which makes it very difficult for retail investors to pick up on accounting scandals before they happen.

Earnings management is a hot topic in the accounting world. In this lesson, you will learn what it is, what techniques are most popular and see examples of each.

A company's number one goal is to make money. Not only do the company owners want to have a profit at the end of every accounting period, but they also want the company financial statements to look as good as they can. After all, the financial statements are what potential investors and creditors look at when they make the decision whether or not to lend the company money or to become an investor. This is where the concept of earnings management comes into play. Earnings management, in a nutshell, is the creative use of different accounting techniques to make financial statements look better. Now that doesn't exactly sound like a legal thing to do, does it? But, believe it or not, it actually is.

Earnings mean the profits of a company which is represented by the bottom line of the income statement and a summary item in financial statements. Earnings are the vital item in financial statement because it represents to what extent the company engaged in value added activities. Earnings also indicate the signal of direct resource allocation in capital market. Investors and analysts look to earnings to determine the attractiveness of a particular stock. The company's stock is measured by the present value of its future earnings. Companies with poor earnings prospects will typically have lower share prices than those with good prospects. A company's ability to generate profit in the future plays a very important role in determining its stock's price. Since company's value is directly related with future earnings, all the executive needs to understand the effect of their accounting choices or learn to manage earnings so that they can make the best possible decisions for the company.

Earnings management may be defined as reasonable and legal management decision making and reporting intended to achieve stable and predictable financial results. A large number of companies are using earnings management either to maintain steady earnings growth or to avoid reporting red link. In other words, earnings management is a strategy used by the management of a company to deliberately manipulate the company's earnings so that the figures match a predetermined target. This practice is carried out for the purpose of income smoothing. An accounting expert can manipulate earnings in several ways within the boundaries of accounting standards. It can be said unethical but not always illegal. Earnings management is firms' strategic tool for maximizing firm value and reducing risks.

The accounting literature defines earnings management as "distorting the application of generally accepted accounting principles." Many in the financial community assume that GAAP deters earnings management. Earnings management results less from distortion of the application of GAAP than from the application of inherently faulty GAAP.

Earnings management is recognized as attempts by management to influence or manipulate reported earnings by using specific accounting methods (or changing methods), recognizing
one-time non recurring items, deferring or accelerating expense or revenue transactions or using other methods designed to influence short term earnings.

So, Earnings management can be defined as the accounting policies or the accruals control, chosen by the management of enterprises to make the earnings reach the expected level under the pressure from the relevant stakeholders and the constraints of generally accepted accounting principles (GAAP). In addition to the choice of accounting policy and the control of accruals, the means of earnings management have also included lobbying for the regulatory organization to modify the accounting principles and the manipulation of profit figures in the fiscal report.

20.9 NEED FOR EARNINGS MANAGEMENT

The best way to answer the need for earnings management is to use the acronym **WISE**. WISE stands for: Window dressing, Internal targets, income Smoothing, External Expectations.

- a. Window dressing refers to the company's decision to dress up the financial statements for potential investors and creditors. The goal of this is to attract new supporters by having financial statements that look like the company's doing great. The company needs to appear to have a history of being profitable, even if it means lowering profits in one accounting period to increase profits in another. Even though this seems fraudulent, it isn't. Overall, the company is still reporting the same amount of profits, but is spreading the amount evenly over a specific time period.
- b. Internal targets are another reason that a company may choose to use earnings management techniques. Often times, the company has set its own internal goals, such as departmental budgeting, and wants to be sure to meet those goals. No department wants to be the one to blow the proposed budget, so earnings management techniques are used to balance this out.
- c. Income smoothing comes into play here because of the fact that potential investors generally like to invest in companies that have a continuous growth pattern. Smoothing out income generated, when there may be spikes at certain times and drops at others, allows it to appear like the company has that smooth growth pattern.
- **d.** External expectations comes into play when the company has already made projections as to what their profits will be and investors now expect that exact 433

amount of profits or more. Management may feel the need to shift revenue from one accounting period to another in order to meet the projected goal. Earnings management, quite simply, takes advantage of the different ways that accounting policies and procedures can be applied to financial reporting.

20.10 TECHNIQUES OF EARNINGS MANAGEMENT

Earnings management is a very popular term used by management to manage earnings. But it does not mean any illegal activities by management to manage earnings. Managers can achieve earnings from accounting choices or by operating decisions. Managers can manage earnings because they have flexibility in making accounting or operating choices. The most successful and widely used earnings management techniques can be classified into twelve categories. Here some of the most common categories are described below:

"Cookie jar reserve" technique: The cookie-jar technique deals a. with estimations of future events. According to GAAP, management has to estimate and record obligations that will be paid in the future as a result of events or transactions in the current fiscal year based on accrual basis. But there is always uncertainty surrounding the estimation process because future is not always certain. There is no correct answer; there may be reasonably possible answers. Management has to select a single amount according to GAAP so there is a chance of taking the advantage of earnings management. Under the cookie-jar technique, the corporation will try to overestimate expenses during the current period to manage earnings. If and when actual expenses turn out lower than estimates, the difference can be put into the "cookie jar" to be used later when the company needs a boost in earnings to meet predictions. Some examples of estimation to manage earnings are: sales returns and allowances, estimates of bad debt and write-downs; estimating inventory write downs; estimating warranty costs; estimating pension expense; terminating pension plans and estimating percentage of completion for long term contracts etc.

- **b. "Big Bath" Techniques:** Although a rare occurrence, sometimes corporations may restructure debt, write-down assets or change and even close down an operating segment. In these instances, expenses are generally unavoidable. If the management record estimated charge (a loss) against earnings for the cost of implementing the change then it will negatively affect the cost of the share price. But the share price may go up rapidly if the charge for restructuring and related operational changes is viewed as positively. According to Big bath technique, if the manager have to report bad news i.e., a loss from substantial restructuring, it is better to report it all at once and get it out of the way.
- "Big Bet on the Future" technique: When an acquisition occurs, c. the corporation acquiring the other is said to have made a big bet on the future. Under Generally Accepted Accounting Principles (GAAP) regulations, an acquisition must be reported as a purchase. This leaves two doors open for earnings management. In the first instance, a company can write off continuing R&D costs against current earnings in the acquisition year, protecting future earnings from these charges. This means that when the costs are actually incurred in the future, they will not have to be reported and thus future earnings will receive a boost. The second method is to claim the earnings of the recently acquired corporation. When the acquired corporation consolidated with parent company earnings, then immediately receive a boost in the current year's earnings. By acquiring another company, the parent company buys a guaranteed boost in current or future earnings through big bet technique.
- **d.** "Flushing" the investment portfolio: To achieve strategic alliance and invest their excess funds, a company buys the shares of another company. Two forms of investment are trading securities and available for sale securities. Actual gains or losses from sales or any changes in the market value of trading securities are reported as operating income where as any change in market value of available for sale securities

during a fiscal period is reported in "other comprehensive income components" at the bottom of the income statement, not in operating income. When available for sale securities are sold, any loss or gain is reported in operating income. A manager can manage its earnings through various techniques which are:

- **Timing sales of securities that have gained value**: The company can sell a portfolio security that has an unrealized gain and can report the gain as operating earnings if it is required.
- **Timing sales of securities that have lost value**: If the manager wants to show lower earnings then he can sell the security that has an unrealized loss and report the loss in operating earnings.
- Change of holding intent, write-down "impaired securities: Management can manage earnings through change of its holdings from available to sale securities to trading securities and vice versa. This would have the effect of moving any unrealized gain or loss on the security to or from the income statement.
- Write-down "impaired securities: Securities that have an apparent long term decline in fair market value can be written down to the reduced value regardless of their portfolio classification.
- e. "Throw out" a problem child: To increase the earnings of future period, the company can sell the subsidiary which is not performed well i. e. "the problem child" subsidiary may be "thrown out". Earnings can be managed through sell the subsidiary, exchange the stock in an equity method subsidiary and spin off the subsidiary. A gain or loss is reported in the current period statement when a subsidiary is sold. The existing shareholders become the owner of the problem child by distributing or exchanging the shares of a subsidiary with the current shareholders. As a result, no gain or loss is normally reported on a spin off. Moreover, it is possible to "swap" the stock in an equity method subsidiary without having any recordable gain or loss.

- f. Introducing new standard: New rules and regulations are introduced in GAAP due to changing demand of business environment. Accounting principles can be modified in a way that will not change the earnings. When a new accounting standard is adopted it takes two to three years to adopt the standard. Voluntary early adoption may provide an opportunity to manage the earnings. A company can take the advantage of manage earnings by changing the time an accrual basis rather than cash basis those are recorded as expense on a cash basis. Moreover, timely adoption of a better revenue recognition rule will provide a new window to manage the earnings.
- **g.** Write off of long term operating Assets: The cost of long term operating assets used or consumed is recorded as an amortization (intangible assets- goodwill, patents, copyrights, and trademark), depreciation (tangible assets- buildings, machinery, equipment) and depletion expense (natural resources-timber, coal, oil, natural gas) over the periods expected to be benefited. Management has the discretionary power when selecting the write off method; write off period; estimating salvage value. It is not necessary to record depreciation or amortization expense if the long term operating asset changed to non operating asset.
- h. Sale/leaseback: A company can enhance the earnings of the financial statement by selling a long term asset that has unrealized gain or losses. For instance, the cost of a machine showed in the balance sheet at Tk 20 lac, but its market value is now Tk. 30 lac. If the machine is sold then Tk. 10 lac gain will enhance the current period earnings. In addition, by recording a gain or loss a company can manage its earnings. According to IAS 17, losses occurring in a sale/leaseback transactions are recognized on the seller's book immediately and gain are amortized over the period if it is capital lease or proportion of the payment is operating lease.
- i. Operating versus non operating Income: Earnings are two types: operating and nonoperating. Non operating earnings will not affect future earnings where as operating earnings are expected to continue in the near future. Non operating income includes: discontinued operations, extraordinary gains or losses, cumulative effect of change in accounting principles. The manager can manage its earnings when making decisions about items which falling into those areas. To illustrate, a disposition of a major manufacturing plant could possibly be classified as either a special or unusual charges

or as discontinued operations. What classification is more accurate may depend on management judgment regarding this factor.

- **j.** Early Retirement of Debt: Management can manage the earnings by selecting the fiscal period of early retirement of debt. A gain or loss is occurred when the company makes the early payment of cash which is different from the book value of long term debt such as bonds. This gain or loss is recorded as an extraordinary item at the bottom of the income statement which boost the earnings of that period.
- k. Use of Derivatives: Derivatives offer a lot of opportunities for manager to manage earnings. Derivatives can be used to protect against some types of business risk, such as: interest rate changes; commodity price change; the weather; oil price changes; changes in foreign currency exchange rates. Derivates should be reported as assets and liabilities in the balance sheet and measured at fair value. Gains and losses from derivate transactions are generally recognized immediately in regular income. For example, suppose a company had a large issue of bonds outstanding at a fixed interest rate. The company could enter into an interest rate swap that would effectively convert the fixed rate bonds into variable rate bonds. When the interest rate increases, the company would then record an increase in interest expense for the bonds and a decrease if the rate has decreased. Since, when the company enters into the swap is up to the company, the timing option provides an opportunity to manage the earnings.
 - **1.** Shrink the ship: Companies do not have to report any gain or loss for repurchase of their own shares on the income statement because no income is recognized on the transaction. Income is only earned through equity transactions outside the firm, not with those involving the firm's owners. A stock buy does not affect earnings but it is used to affect earnings per share.

So, these are the common & popular earnings management techniques. Management uses these techniques as & when required to manage earnings. Management uses cookie jar reserve technique to show boom earnings in the future period. Big Bath technique are used in the belief that if a manager have to report bad news i.e., a loss from substantial restructuring, it is better to report it all at once and get it out of the way. Sometimes a subsidiary may underperformed & the earnings of this type of security are managed by throw out a problem child method. Companies that changes GAAP have to take care that stock market does not view the change as lowering the quality of earnings. Timely disposition of long term productive assets (Sale/leaseback and asset exchange technique) can result in the recording of unrealized gains or losses. Under the amortization, depreciation and depletion method, management manages earnings by selecting the write off method & period & estimating salvage value.

20.11 OBJECTIVES OF EARNINGS MANAGEMENT

The reasons for Earnings management are diverse and range from the intention to satisfy analysts' expectations to incentives to realize bonuses or to maintain a competitive position within the financial market. Legal earnings management means financial reports are adjusted in line with financial reporting standards. Earnings management becomes fraudulent financial reporting when it falls outside the bounds of acceptable accounting practice. Therefore, companies will only engage in earnings management when the benefits of this behavior are higher than the risks and costs involved. Stable dividend and stable business act as motivational tools to the manager to manage earnings (Suda and Shuto, 2006). Matsumoto (2002) argues that firms with high growth prospects have greater incentives to manipulate earnings to avoid unfavorable market reaction to negative earnings news. Matsumoto also stated that the earnings of loss firms are less value relevant and thus managers are less likely to adjust earnings to meet targets. Prior researches identified different categories of incentives: stock market incentives; signaling / concealing private information; political costs; personal interest; internal motives; management compensation contract motivations; lending contracts motivations and regulatory motivations

a. Stock market incentives The interaction between accounting numbers and stock markets reaction can indeed push management towards earnings management. Investors often rely on the views and forecasts of stock market analysts to put together a portfolio of potentially successful firms. Meeting or beating the analysts' forecasts seems to be of enough importance for companies to engage in earnings management. Meeting the analysts' expectations is important because firms that meet or beat expectations enjoy higher returns, even when it is likely that this is achieved through earnings management or expectations management. Missing an

earnings benchmark has negative implications for stock returns as well as CEO compensation. To be able to meet or beat the forecasts, managers turn to earnings management. If pre-managed earnings are below the forecast, managers use income-increasing earnings management. If pre-managed earnings are higher than the forecast, managers can choose between income-decreasing earnings management (saving it for a rainy day) or not managing the earnings (hoping for an increase in stock return). Companies that show an increase in earnings as well as in revenues are less susceptible to earnings management. To align shareholders' goals with managers' objectives and give less room to agency conflicts, CEO's and senior management are often compensated by equity incentives. This kind of opportunistic behavior might even increase when there is a direct link to these two incentives and the financial benefit of the firm's management. Recent research also considered earnings management in specific stock market situations, such as an initial public offering and seasoned equity offerings.

- b. Signaling or concealing private information Earnings management is, by definition, a process of altering financial information in order to achieve certain goals. Failing firms engage in earnings management and alter their annual accounts to conceal their financial struggle without immediately measuring the consequences on stock price or CEO compensation. The growth signal combined with another signal such as a stock split might be an effective way of communicating private information.
- c. Political costs Firms can also manage reported earnings by changing financial statements in order to influence shareholders' opinions and decisions. Governmental regulations and tax laws, when company make use of financial reports, are obvious candidates to be analyzed as possible sources of earnings management motives. It can be valuable to companies to seem more/less profitable to escape from governmental interference. When accounting numbers are the basis for tax calculation, there might be large tax avoidance incentives for earnings management. In summary, political costs seem to be a strong incentive for firms to manage their earnings. This is even proven in economies where there exist no efficient stock markets and CEO's are appointed by the government.

- d. Personal incentives There might be other than financial motives for the CEO to manage earnings. A new CEO can be tending to downwards earnings management in the year of change and upwards earnings management in the following years. Retiring CEO's use upwards earnings management to leave in style and keep a seat on the board.
- e. Internal motives Finally, there are motives for earnings management that are not linked to external stakeholders (such as shareholders, government or unions) but are intracompany. Within a company, it might also be useful to alter financial reports or to structure transactions in such a way that budget ratcheting is avoided or performance standards are met. Managers will choose to use income-decreasing unexpected accruals when the earnings innovations are transitory. Companies using externally determined standards (i.e. relatively unaffected by participants such as peer group standards, fixed standards or cost of capital) are less likely to smooth earnings than those companies that use internal standards (budget goals, prior year, subjective standards).
- f. Management compensation contract motivations The management compensation theory, also known as the bonus plan hypothesis contends that managers are motivated to use earnings management to improve their compensation, as management bonuses are often tied to the firm's earnings. It is thus expected that earnings management is used to increase income. Managers are more likely to choose to report accruals that defer income when the cap on bonus awards were reached, as they had no more to gain from extra earnings and would be better off increasing income for the following year at that point. These ties in with the 'big bath' hypothesis, which suggests that if managers are unable to manipulate earnings to reach a particular target, they will have the incentive to use earnings management to decrease current earnings in favor of future earnings and, therefore, future bonuses. Dechow & Sloan (1995) found that managers decrease research and development expenditure in the final year of their terms in order to increase earnings and thus their payout upon leaving the company.
- **g.** Lending contracts motivations Another major hypothesis is the debt covenant hypothesis. This theory is based on the fact that creditors often impose restrictions

on the payment of dividends, share buybacks and the issuing of additional debt in terms of reported accounting figures and ratios, in order to ensure the repayment of the firm's borrowings.

h. Regulatory motivations Some industries, in particular the banking, insurance and utility industries are monitored for compliance with regulations linked to accounting figures and ratios. Banks and insurance firms especially are often subject to requirements that they have enough capital or assets to meet their liabilities. Such regulations may give managers incentives to use earnings management. Research has shown that banks which are close to minimum capital requirements use earnings management techniques such as overstating loan loss provisions, understating loan write –offs and recognizing abnormal realized gains on their investment portfolios, presumably so as not to breach the regulatory requirements.

20.12 HOW TO CONTROL EARNINGS MANAGEMENT

One way to control earnings management (by accounting techniques) is setting more rigorous accounting standards. However, this may have the unwanted effect that manager's turn to 'real earnings management', which consists of abnormal, suboptimal, business practices in order to change reported earnings. Given the weak legal system and the lack of accounting and capital market infrastructure in transitional economies, emerging economies are particularly likely to face severe problems in monitoring managers' accounting decisions. The introduction of international accounting standard and practices in the market has been shown to increase market liquidity; reduced transaction cost, and improved pricing efficiency. It is still an open question as to whether the adoption of international accounting standards improves the quality of accounting information, thereby reducing the level of earnings management. Firms adopting IAS are less likely to smooth earnings, less likely to

manage earnings upwards to avoid reporting a loss, and more likely to recognize loss timely than nonadopting firms. As the world's economies have become increasingly interlinked, many countries are trying to harmonize their accounting standards, and even to adopt a common set of reporting standards. Under the lead of the International Accounting Standards Board (IASB), more than 100 countries have either implemented International Financial Reporting Standards (IFRS) or plan to do so. The US Securities and Exchange Commission (SEC) announced that it would promote international compatibility by allowing foreign companies to access US capital markets while reporting under IFRS (SEC,2007). In the European Union, companies were obliged to prepare their consolidated accounts in conformity with IFRS if, at their balance sheet date for financial years starting on or after 1 January 2005, their securities were admitted to trading on a regulated market of any EU Member State (European Union, 2002). A similar rule applies in Australia. In addition, corporate governance practices signal the potential for earnings management. Permissive structures indicate that manipulation is more likely. The board of directors sets overall policy & provided oversight for operating activities. Historically, boards were composed mainly of owners, managers & other insiders. It is now clear that a majority of independent board member is essential for effective oversight.

Moreover, if accounting standards as well as governmental scrutiny do not completely eliminate earnings management then auditors should be confronted with attempts to alter financial reports. Increased audit quality could or should lead to increased quality of reported earnings. Audit committee members must be aware of the ways in which management's accounting-related choices provide opportunities to manage earnings —through timing of transactions and making estimates. Roman (2009) suggested that Audit committee members can use the summary of critical accounting policies as follows:

- Understand the transactions that require management to make the judgment or estimate. (For example, a company that mentions its accounting for inventory as significant is telling us it has more goods for sale during a period than it in fact sells.)
- 2) Understand the choices available to management in U.S. GAAP or, now, under IFRS, to account for the transactions in item 1. (In the U.S., the company can use FIFO or LIFO or weighted-average cost flow assumptions or specific identification. The company reporting under IFRS cannot use LIFO.)
- Understand what management chose and why. (A company choosing LIFO likely does it to defer income tax payments in times of rising prices and increasing inventories.)

4) Most important, understand the potential a given choice provides for earnings management. (If the auditor doesn't know how a company using LIFO can manage earnings by delaying year-end purchases, he won't know to ask whether there have been unusual year-end accelerated or deferred purchases.) When auditors understand how a company's transactions intertwine with its accounting principles, they will be able to determine whether a company engages in earnings management or not.

Thus, earnings management is a tool for satisfying self interest of the managers. But, it can be used for the welfare of the stake holders, if it is ethically used. So, to get the optimum benefit of earnings management, steps should be taken to improve corporate governance. Accounting standards should be revised and set in such ways, that there remain no loopholes for manipulate earnings. Auditors should be more careful in detecting earnings manipulation and their independence should be ensured. Finally, the consciousness and the morality of the stake holders can turn this malpractice into a good one if the motivations behind the earnings management are free from evil intensions.

20.13 CREDIT TERMS OR TERMS OF PAYMENT

Terms of payment vary widely in practice. At one end, if the seller has financial sinews it may extend liberal credit to the buyer till it converts goods bought into cash. At the other end, the buyer may pay cash in advance to the seller and finance the entire trade cycle. Most commonly, however, some in-between arrangement is chosen wherein the trade cycle is financed partly by the seller, partly by the buyer, and partly by some financial intermediary. The major terms of payment are discussed below.

- a. Cash Terms When goods are sold on cash terms, the payment is received either before the goods are shipped (cash in advance) or when the goods are delivered (cash on delivery). *Cash in advance* is generally insisted upon when goods are made to order. In such a case, the seller would like to finance production and eliminate marketing risks. *Cash on delivery* is often demanded by the seller if it is in a strong bargaining position and/or the customer is perceived to be risky.
- **b. Open Account** Credit sales are generally on open account. This means that the seller first ships the goods and then sends the invoice (bill). The credit terms (credit period, cash discount for prompt payment, the period of discount and so on) are

stated in the invoice which is acknowledged by the buyer. There is no formal acknowledgement of indebtedness by the buyer.

- c. Credit Period The credit period refers to the length of time the customer is allowed to pay for its purchases. It is usually mentioned in days from the date of invoice. If a firm allows 30 days, say, of credit with no discount for early payment, its credit terms are stated as 'net 30'.
- **d. Cash Discount** Firms generally offer cash discount to induce customers to make prompt payment. For example, credit terms of 2/10, net 30 mean that a discount of 2 per cent is offered if the payment is made by the tenth day; otherwise, the full payment is due by the thirteeth day.
- e. Billing To streamline billings, it is a common practice to send a single bill every month. For example at the end of every month, the customer may be sent a consolidated bill for the purchases made from the 26th of the previous month to the 25th of the current month.
- f. Consignment When goods are sent on consignment, they are merely shipped but not sold to the consignee. The consignee acts as the agent of the seller (consignor). The title of the goods is retained by the seller till they are sold by the consignee to a third party. Periodically, sales proceeds are remitted by the consignee to the seller.
- **g. Bill of Exchange** Whether goods are shipped on open account or consignment, the seller does not have strong evidence of the buyer's obligation. A draft represents an unconditional order issued by the seller asking the buyer to pay on demand (demand draft) or at a certain future date (time draft), the amount specified on it. It is typically accompanied by shipping documents that are delivered to the drawee when he pays or accepts the draft. When the drawee accepts a time draft it becomes a trade acceptance. The seller may hold the acceptance till it matures or get it discounted.

The draft performs three useful functions: (i) It serves as a written evidence of a definite obligation, (ii) It helps in reducing the cost of financing to some extent, (iii) It represents a negotiable instrument.

h. Letter of Credit Commonly used in international trade, the letter of credit is now used in domestic trade as well. A letter of credit, or L/C, is issued by a bank on behalf of its customer (buyer) to the seller. As per this document, the bank agrees to honour drafts drawn on it for the supplies made to the customer, if the seller fulfills the conditions laid down in the L/C.

The L/C serves several useful functions: (i) It virtually eliminates credit risk, if the bank has a good standing, (ii) It reduces uncertainty as the seller knows the conditions that should be fulfilled to receive payment, (iii) It offers safety to the buyer who wants to ensure that payment is made only in conformity with the conditions of the L/C.

20.14 CREDIT POLICY VARIABLES

The important dimensions of a firm's credit policy are:

- Credit standards
- Credit period
- Cash discount
- Collection effort

These variables are related and have a bearing on the level of sales, bad debt loss, discounts taken by customers, and collection expenses. For purposes of expository convenience we examine each of these variables independently.

20.14.1 Credit Standards

A pivotal question in the credit policy of a firm is: What standard should be applied in accepting or rejecting an account for credit granting? A firm has a wide range of choice in this respect. At one end of the spectrum, it may decide not to extend credit to any customer, however strong his credit rating may be. At the other end, it may decide to grant credit to all customers irrespective of their credit rating. Between these two extreme positions lie several possibilities, often the more practical ones. In general, liberal credit standards tend to push sales up by attracting more customers. This is, however, accompanied by a higher incidence of bad debt loss, a larger investment in receivables, and a higher cost of collection. Stiff credit standards have opposite effects. They tend to depress sales, reduce the incidence of bad debt loss, decrease the investment in receivables, and lower the collection cost.

To judge whether credit standards should be relaxed (or tightened) we must measure the impact of credit standard on residual income. Residual income is the surplus left after providing for a charge for additional capital required when credit standards are relaxed. The effect of relaxing the credit standards on residual income may be estimated as follows:

$\Delta \text{RI} = [\Delta S (1 - V) - \Delta S b_n] (1 - t) - k \Delta I$

where ΔRI is the change in residual income, ΔS is the increase in sales, *V* is the ratio of variable costs to sales, b_n is the bad debt loss ratio on new sales, *t* is the corporate tax rate, *k* is the post-tax cost of capital, and ΔI is the increase in receivables investment ¹.

On the right hand side of the Eq. (25.1), ΔS (1 – *V*) measures the increase in gross profit (defined here as sales minus variable costs) on account of incremental sales, ΔSb_n reflects the

¹Note that ΔI is equal to:

 $\frac{\Delta S}{360} \times ACP \times V$

where $\Delta S/360$ is the average daily change (increase) in sales. The divisor here can with equal justification be 365, rather than 360, and ACP is the average collection period.

bad debt loss on incremental sales, $[\Delta S (1 - V) - \Delta S b_n] (1 - t)$ represents the post-tax profit arising from increase in sales after considering bad debt losses, and $k \Delta I$ measures the post-tax opportunity cost of additional funds locked in receivables.

Example The current sales of Pioneer Company are Rs. 100 million. The company classifies its customers into 4 credit categories, 1 through 4. Credit rating diminishes as one goes from category 1 to category 4. (Customers in category 1 have the highest credit rating and customers in category 4 have the lowest credit rating). Pioneer presently extends

unlimited credit to customers in categories 1 and 2, limited credit to customers in category 3, and no credit to customers in category 4. As a result of this credit policy, the company is foregoing sales to the extent of Rs. 10 million to customers in category 4. The firm is considering the adoption of a more liberal credit policy under which customers in category 3 would be extended unlimited credit and customers in category 4 would be extended limited credit. Such relaxation would increase the sales by Rs. 15 million on which bad debt losses would be 10 per cent. The contribution margin ratio, (1 - V), for the firm is 20 per cent, the average collection period, ACP, is 40 days, and the post-tax cost of funds, / c, is 10 per cent. The tax rate for Pioneer is 40 per cent.

Given the above information, the effect of relaxing the credit policy on residual income would be:

$$[15,000,000 (1-0.80) - 15,000,000 \times 0.1] (1-0.4) - 0.10 \times \frac{15,000,000}{360} \times 40 \times 0.80$$

= Rs. 766,667

Since the impact of change in credit standards on residual income is positive, the proposed change is desirable.

20.14.2 Credit Period

The credit period refers to the length of time customers are allowed to pay for their purchases. It generally varies from 15 days to 60 days. When a firm does not extend any credit, the credit period would obviously be zero. If a firm allows 30 days, say, of credit, with no discount to induce early payments, its credit terms are stated as 'net 30'.

Lengthening of the credit period pushes sales up by inducing existing customers to purchase more and attracting additional customers. This is, however, accompanied by a larger investment in debtors and a higher incidence of bad debt loss. Shortening of the credit period would have opposite influences. It tends to lower sales, decrease investment in debtors, and reduce the incidence of bad debt loss.

Since the effects of lengthening the credit period are similar to that of relaxing the credit standards, we may estimate the effect on residual income of change in credit period by using the same formula:

$$\Delta RI = [\Delta S (1 - V) - \Delta DIS] (1 - t) + k \Delta I$$

where ΔRI is the change in residual income, ΔS is the increase in sales, *V* is the variable cost to sales ratio, ΔDIS^2 is the increase in discount cost, *t* is the tax rate, *k* is the cost of capital, and ΔI^3 is the savings in receivable investment.

Example The present credit terms of Progressive Company are 1/10, net 30. Its sales are Rs.80 million, its average collection period, ACP, is 20 days, its variable costs to sales ratio, V, is 0.85, and its cost of capital, k, is 10 percent. The proportion of sales on which customers currently take discount, p_o , is 0.5. Progressive is considering relaxing its discount terms to 2/10, net 30. Such a relaxation is expected to increase sales by Rs. 5 million, reduce the ACP to 14 days, and increase the proportion of discount sales to 0.8. Progressive's tax rate is 40 percent.

Given the above information, the effect of relaxing the discount policy on net profit would be:

 $[5,000,000 (0.15) - 960,000] (1 - 0.4) + 0.10 \times 1,168,055 = -Rs. 9,194$

Since the impact of change in discount policy on gross profit is negative, it is not desirable to change the discount terms from 1/10, net 30 to 2/10, net 30.

$$\Delta I = (ACP_n - ACP_o) \left[\frac{S_o}{360}\right] + V (ACP_n) \frac{\Delta S}{360}$$

where AI is the increase in receivables investment, ACP,, is the new average collection period (after lengthening the credit period), ACP0 is the old average collection period, V is the ratio of variable cost to sales, and AS is the increase in sales.

On the right hand side of Eq., the first term represents the incremental investment in receivables associated with existing sales and the second term represents the investment in receivables arising from incremental sales. It may be noted that the incremental investment in receivables arising from existing sales is based on the value of sales, whereas the investment in receivables arising from new sales is based on the variable costs associated with new sales. The difference exists because the firm would have collected the full sales price on the old receivables earlier in the absence of credit policy change, whereas it invests only the variable costs associated with new receivables.

Example Zenith Corporation currently provides 30 days of credit to its customers. Its present level of sales is Rs. 50 million. The firm's cost of capital is 10 percent and the ratio of variable costs to sales is 0.85. Zenith is considering extending its credit period to 60

days. Such an extension is likely to push sales up by Rs. 5 million. The bad debt proportion on additional sales would be 8 percent. The tax rate for Zenith is 40 percent.

Given the above information, the effect of lengthening the credit period on the residual income of Zenith would be:

$$[5,000,000 \times 0.15 - 5,000,000 \times 0.08] (0.6)$$

- 0.10
$$\left[(60 - 30) \times \frac{50,000,000}{360} + 0.85 \times 60 \times \frac{5,000,000}{360} \right]$$

=
$$[750,000 - 400,000] (0.6) - 0.10 [4,166,667 + 708,333]$$

=
$$-277,500.$$

Since the impact of change in credit period on residual income is negative, the proposed change is not desirable.

20.14.3 Cash Discount

-

Firms generally offer cash discounts to induce customers to make prompt payments. The percentage discount and the period during which it is available are reflected in the credit terms. For example, credit terms of 2/10, net 30 mean that a discount of 2 percent is offered if the payment is made by the tenth day; otherwise the full payment is due by the thirteeth day.

Liberalising the cash discount policy may mean that the discount percentage is increased and/or the discount period is lengthened. Such an action tends to enhance sales (because the discount is regarded as price reduction), reduce the average collection period (as customers pay promptly), and increase the cost of discount. The effect of such an action on net profit may be estimated by the following formula:

$$\Delta RI = [\Delta S (1 - V) - \Delta DIS] (1 - t) + k \Delta I$$

20.14.4 Collection Effort

i.

The collection programme of the firm, aimed at timely collection of receivables, may consist of the following:

- Monitoring the state of receivables
- Dispatch of letters to customers whose due date is approaching
- E-mail and telephonic advice to customers around the due date
- Threat of legal action to overdue accounts
- Legal action against overdue accounts

A rigorous collection programme tends to decrease sales, shorten the average collection period, reduce bad debt percentage, and increase the collection expense. A lax collection programme, on the other hand, would push sales up, lengthen the average collection period, increase the bad debt percentage, and perhaps reduce the collection expense.

The effect of decreasing the rigour of collection programme on residual income may be estimated as follows:

$$\Delta \text{RI} = [\Delta S (1 - V) - \Delta \text{BD}] (1 - t) - k\Delta I$$
⁴⁵¹

20.15 CREDIT ANALYSIS OR CREDIT EVALUATION

Proper assessment of credit risks is important as it helps in establishing credit limits. In assessing credit risks, two types of errors occur:

Type I error : A good customer is misclassified as a poor credit risk.

Type II error : A bad customer is misclassified as a good credit risk.

Both the errors are costly. Type I error leads to loss of profit on sales to good customers who are denied credit. Type II error results in bad-debt losses on credit sales made to risky customers.

While misclassification errors cannot be eliminated wholly, a firm can mitigate their occurrence by doing proper credit evaluation. Three broad approaches are used for credit evaluation, viz., traditional credit analysis, numerical credit scoring, and discriminant analysis.

a. Traditional Credit Analysis The traditional approach to credit analysis calls for assessing a prospective customer in terms of the "five C's of credit"

- **Character** The willingness of the customer to honour his obligations. It reflects integrity, a moral attribute that is considered very important by credit managers.
- **Capacity** The ability of the customer to meet credit obligations from the operating cash flows.
- **Capital** The financial reserves of the customer. If the customer has problems in meeting credit obligations from operating cash flow, the focus shifts to its capital.
- **Collateral** The security offered by the customer in the form of pledged assets.
- **Conditions** The general economic conditions that affect the customer.

To get information on the five C's, a firm may rely on the following:

Financial Statements : Financial statements contain a wealth of information. A searching analysis of the customer's financial statements can provide useful insights into the creditworthiness of the customer. The following ratios seem particularly helpful in this context: current ratio, acid-test ratio, debt-equity ratio, EBIT to total assets ratio, and return on equity.

Bank References : The banker of the prospective customer may be another source of information. To ensure a higher degree of candour, the customer's banker may be approached indirectly through the bank of the firm granting credit.

Experience of the Firm : Consulting one's own experience is very important. If the firm had previous dealings with the customer, then it is worth asking: How prompt has the customer been in making payments? How well has the customer honoured his word in the past? Where the customer is being approached for the first time, the impression of the company' sales personnel is useful.

Prices and Yields on Securities : For listed companies, valuable inferences can be derived from stock market data. Higher the price-earnings multiple and lower the yield on bonds, other things being equal, lower will be the credit risk.

Exhibit 20.1 shows a logic that the credit analyst may employ to process creditrelated information. For the sake of simplicity, only three C's, viz. character, capacity, and capital are considered. For judging a customer on these dimensions, the credit analyst may use quantitative measures (like financial ratios) and qualitative assessments (like 'trustworthy'). **Sequential Credit Analysis** The full logic of Exhibit 20.1 may be redundant for certain customers. For example, if the character of a customer is found weak, it may be pointless to conduct the credit investigation further. Hence, sequential credit analysis is a more efficient method. In this analysis, investigation is carried further if the benefit of such analysis outweighs its cost. To illustrate, consider three stages of credit analysis: review of the past payment record, detailed internal analysis, and credit investigation by an external agency. The credit analyst proceeds from stage one to stage two only if there is no past payment history and hence a detailed internal credit analysis is warranted. Likewise, the credit analyst goes from stage two to stage three only if internal credit analysis suggests that the customer poses a medium risk and hence there is a need for external credit analysis.

Exhibit 20.1 Traditional Credit Analysis



- b. Numerical Credit Scoring In traditional credit analysis, customers are assigned to various risk classes somewhat judgmentally on the basis of the five C's of credit. Credit analysts may, however, want to use a more systematic numerical credit scoring system. Such a system may involve the following steps:
 - 1. Identify factors relevant for credit evaluation.
 - 2. Assign weights to these factors that reflect their relative importance.
 - 3. Rate the customer on various factors, using a suitable rating scale (usually a 5-point scale or a 7-point scale is used).
 - 4. For each factor, multiply the factor rating with the factor weight to get the factor score.
 - 5. Add all the factor scores to get the overall customer rating index.
 - 6. Based on the rating index, classify the customer.

Exhibit 20.2 illustrates the use of this procedure for assigning a rating index.

Factor	Factor	Rating					Factor
	Weight	5	4	3	2	1	
Past payment	0.30		✓				1.20
Net profit margin	0.20		✓				0.80
Current ratio	0.20			√			0.60
Debt-equity ratio	0.10		✓				0.40
Return on equity	0.20	✓					1.00
		Rating index				4.00	

Exhibit 20.2 Construction of a Credit Rating Index (based on a 5-point rating scale)

c. Discriminant Analysis The credit index described above is somewhat ad hoc in nature and is based on weights which are subjective in nature. Can a better credit index be constructed? Yes, the technique of discriminant analysis may be employed to construct a better risk index. The nature of this analysis may be discussed with

the help of a simple example. ABC Company manufactures gensets for industrial customers. It considers the following financial ratios as the basic determinants of creditworthiness of its customers: current ratio and return on net worth. The plot of its customers on a graph of these two variables is shown in Exhibit 20.3.

Exhibit 20.3 Discriminating Power of Current Ratio and Return on Equity



+s represent customers who have paid their dues and Os represent customers who have defaulted. The straight line seems to separate the +s from the Os – while it may not be possible to completely separate the +s and Os with the help of a straight line, the straight line does a fairly good job of segregating the two groups. The equation for this straight line is:

3 = 1 Current ratio + 0.1 Return on equity

Since this is the line which discriminates between the good customers (those who pay) and the bad customers (those who default), a customer with a Z score of more than 3 is deemed

creditworthy and a customer with a Z score of less than 3 is considered not creditworthy.

Of course, the higher the Z score, the stronger the credit rating. In the foregoing discussion we considered a Z function of two variables. In most of the practical applications a Z function of several variables is considered.

Risk Classification Scheme

On the basis of information and analysis in the credit investigation process, customers may be classified into various risk categories. A simple risk classification scheme is shown in Exhibit 20.4. The risk classification scheme described in Exhibit 20.4 is one of the many

risk classification schemes that may be used. Each firm would have to develop a risk classification scheme appropriate to its needs and circumstances.

Exhibit 20.4 Risk Classification Scheme

Risk Class	Description
1	Customers with no risk of default
2	Customers with negligible risk of default (default rate less than 2 per cent)
3	Customers with little risk of default (default rate between 2 per cent and 5 per cent)
4	Customers with some risk of default (default rate between 5 per cent and 10 per cent)
5	Customers with significant risk of default (default rate in excess of 10 per cent)

20.16 SHORT TERM SOURCE OF FINANCE- THE MONEY MARKET

The money market is a key component of the financial system as it is the fulcrum of monetary operations conducted by the central bank in its pursuit of monetary policy objectives. It is a market for short-term funds with maturity ranging from overnight to one year and includes financial instruments that are deemed to be close substitutes of money. The money market performs three broad functions. One, it provides an equilibrating mechanism for demand and supply of short-term funds. Two, it enables borrowers and lenders of short term funds to fulfil their borrowing and investment requirements at an efficient market clearing price. Three, it provides an avenue for central bank intervention in influencing both quantum and cost of liquidity in the financial system, thereby transmitting monetary policy impulses to the real economy.

Money market is a market for short term credit. It refers to the institutional arrangement facilitating borrowing and lending of short term funds. In money market, funds may be available for a day, a week, three months, six months, etc. It is the market of short term financial assets, which are near substitutes for money. The instruments which are dealt within the money market are liquid and can be turned over quickly at low transaction cost and without loss. The funds are available against different types of instruments such as banker's acceptance, bills of exchange, and short term securities. These all financial assets are known as near money.

The money market comprises individuals, institutions and the government. Those agencies create demand for money and also ensure supply of money for a short term period. The demand for money emanates from merchants, traders, brokers, manufacturers, speculators and even government institutions. The suppliers include commercial banks, insurance companies, non banking financial concerns and the central Bank of the country. Thus, the money market represents the country's pool of short-term investible funds to meet the short term requirements of the economy.

Therefore, the money market is the place or mechanism whereby funds are obtained for short periods of time (from one day to one year) and financial assets representing short-term claims are exchanged.

Definitions of Money Market

"Money market is the term designed to include the financial institutions which handle the purchase, sale and transfer of short-term credit instruments. The money market includes the entire machinery for the channelization of short term funds. Concerned primarily with business needs for working capital, individuals' borrowing and government short-term obligations, it differs from the long term or capital market which devotes its attention to dealings in bonds, corporate stocks and mortgage credit."

- McGraw Hill Dictionary of Modern Economics

"A money market is a mechanical device through which short term funds are loaned and borrowed through which a large part of the financial transactions of a particular country or world are degraded. A money market is distinct from but supplementary to the commercial banking system."

- Nadler and Shipman

"Money market is the centre for dealings, mainly of short term character, in money assets; it meets the short term requirements of borrowers and provides liquidity or cash to the lenders. It is the place where short-term surplus investible funds at the disposal of financial and other institutions and individuals are bid by borrowers' agents comprising institutions and individuals and also the government itself."

-Reserve Bank of India

"Money market is the collective name given to the various firms and institutions that deal in the various grades of the near-money."

-Geoffrey

Features of Money Market

The features of money market are presented below:

- **a. Constituents:** Money market has three constituents such as i) It has borrowers and lenders ii) It deals with short term credit instruments iii) It has a price in the form of rate of interest.
- **b. Dealers of money Market:** Generally the markets are participated by lenders and borrowers. The borrowers in the money market are manufacturers, traders, speculators and government institutions. Generally the lenders in the money market are commercial bank, central bank and non banking financial intermediaries.
- c. Near Money Asset: Money market deals in short term financial instruments which are called "Near money asset". These assets are liquid and are readily marketable. These assets are useful and against which the funds can be borrowed from the money market. These near money assets include bills of exchange, Bills Receivables, short term government securities.
- **d.** No Need of Personal Contact: Money market is not restricted to a particular place. It is **a** place where borrowers and lenders meet each other. But in normal practice it is not necessary that the borrowers and lender should have personal contacts with each other at a specified place. The parties may carry on their deals through telephone or mail. Therefore the money market relates to arrangement for transfer of funds between lenders and borrowers.
- e. Short Term Funds: Money market provides fund to the needy party for short term period. The borrowers can obtain funds for periods ranging from a day to six months.

- **f. Heterogeneous Market:** The money market consists of several sub markets. Each market deals with a specified short term credit instrument, forex, bills market, call money market.
- **g. Fluctuations:** Money markets change with time. The functions of money markets in different countries are broadly the same. But the financial institutions and the instruments vary considerably from country to country.
- **h. Different from Capital Market:** Money market is a market for short term credit and capital market is long term market. It is different on the basis of maturity period. Money market deals with short term lending and borrowing of funds. The capital market deals with long term borrowing and lending of funds.

Importance of Money Market

Money market plays an important role in the process of industrial and commercial progress of the nation. A well developed money market is essential for a modern digital economy. Money market has important role to play in the economic development of a nation. The functioning of an efficient money market in a country is helpful to its various segments as detailed below:

- a. Sources of Capital: Money market is an important source of financing for trade and industry. The short-term finances are made available through bills, commercial papers, etc. The happenings in the money market influence the availability of finances both for the national and international trade. Besides trade and industry, money market offers to the government an important non-inflationary avenue of raising short term funds through bills that are subscribed by commercial banks and the public.
- **b. Ideal Investment:** Money market offers an ideal source of investment for the commercial banks. The market helps them invest their short-term surplus funds so as to meet statutory reserve requirements. For instance, the requirements of Cash Reserve ratio (CRR) and the

Statutory Liquidity Ratio (SLR) vary every fortnight depending upon banks' net demand and time liability (NDTL).

- c. Effective Monetary Management: An efficient money market being sensitive in nature allows for the effective implementation of monetary policy of the central bank and thus paves way for the efficient monetary management of the country. In fact, the money market events serve as an important guide to the government in formulating, revising and implementing the monetary policy. This is rightly so, given the fact that the conditions prevailing in money market serve as an indicator of monetary state of an economy. The monetary authority uses the money market for diffusing the effects of its actions throughout the banking system and the economy, so as to promote economic growth with stability.
- **d.** Economic Development: Money market being an integral part of a country's economy, contributes substantially to the economic development of a country. A developed money market is indispensable for the rapid development of the economy. In fact, the stage of development of the economy will be reflected in the stage of development of a money market. This is borne out by the fact that ill-developed nature of a money market is responsible for the primitive nature of economic development of a country. The absence of a well developed money market would constrain the economies from making available on a continuous basis the supply of adequate funds.
- e. Efficient Banking System: The existence of a developed money market greatly facilitates the smooth and efficient functioning of the banking and financial system. Such an advantage contributes to the promotion of trade and industry in the economy. Further the mediating role played by the commercial bankers ensures delivery of credit at the most opportune time. Similarly, money market enables the commercial banks to meet much of their unexpected needs for funds quickly and cheaply. It is possible for the commercial banks to utilize their funds profitably and with liquidity.

- **f. Facilitating Trade:** Money market is of immense help to the business community in the following ways:
 - Providing an ideal payment mechanism making it possible for expeditious transfer of large sums of money.
 - Meeting the working capital requirements for carrying out the production and marketing activities.
 - Making efficient investment of surplus funds into near-money assets which can be quickly converted into money as and when needed.
- g. Helpful to Government: The government uses the money market as an arena in which short-term funds are raised by floating treasury bills. It helps the government to manage its monetary position smoothly through the central bank of the country.

20.17 CRITICAL APPRAISAL OF SHORT TERM SOURCES OF FINANCE

The money market is the market in which short-term funds are borrowed and lent. The money market is not a single homogeneous one but is composed of several submarkets, each one dealing in different types of short term credits. The most important sources and components of the money market are:

- a. Call money market,
- b. Acceptance market,
- c. Bill market;
- i. Treasury bills market
- ii. Commercial bills market
- iii. CP market
- d. Government securities market and
- e. Gilt-edged market.

a. Call money market

The call money market, which deals in overnight funds, is a key segment of the money market in India. Funds for 2.14 days are termed as notice money. Various reforms measures initiated in this segment have resulted in more orderly conditions and increased liquidity. The call money market refers to the market for extremely short-period loans. It deals in call loans or call money granted for one day. The participants in the call money market are mostly banks. It is known as interbank call money market. The suppliers of the fund in the call money market are the banks and demand comes from the banks also. Call money market is the part of national money market. The day to day surplus funds of the banks are traded in the call money market. The call money market is of term nature. The maturity of the call money market varies between one day to a fortnight. The loans of the call market are repayable on demand and at the option of either the lender or the borrower. They are highly liquid. The nature of this market in different countries varies from each other. The nature of call market in the U.S and U.K are as per their acts and regulations. Call loans and short notice in the balance sheets of banks is a highly liquid asset. They are unsecured in India. The money and credit situation in India every year is subject to seasonal fluctuations. The trading on the call market is influenced by seasonal fluctuations. The seasonal ups and downs are reflected in the volume of money at call and short notice and the rates are at different times of the year. The call money borrowings are highest around March every year. Because with drawls of deposit in March are used to meet yearly tax payment. The financial institutions also with draw the money to meet their statutory obligation. If the bank CRR increases, automatically there will be increase in the call money borrowings.

Features of call money market

Call money market has the following features:

a. Call and Notice Money: Call money market deals in very short period funds called 'call funds/money'. The period ranges from overnight to a fortnight. Whereas 'call money' is repayable on

the immediate next working day, 'notice money' is repayable with in a fortnight. These transactions are not covered by any collateral security. This is because call loans are repayable on demand at the option of the borrower or lender at a very short notice. This makes call loans very liquid, next only to cash.

b. Sensitive Segment: Call money market is the most sensitive segment of the financial system. This is because; any change in the demand and supply short-term funds in the financial system is quickly reflected in call money rates. The central bank of the country makes use of this market for conducting the open market operations effectively.

Participants of call money market

The important players in the call money market are Scheduled commercial banks, Non-Scheduled banks, Foreign banks, Urban banks, Cooperative banks, Discount and Finance house of India and Securities Trading Corporation of India. The DFHI and STC borrow as well as lend like banks and primary dealers in the call market. The foreign banks borrow money from this market due to difficulties in tapings deposits and increase in the cost of servicing FCNR deposits. The large commercials have been regularly participating in this market excluding SBI. The SBI kept itself away from the call market till 1970. During 1970s a new development arises in the market that the direct participation in it by the term lending institutions like, GIC, LIC and UTI. There is indirect participation in the call money market by other institutions such as IDBI, IFCI and ICICI. The continuous participation in the call money market by the players would help to integrate the long term and short term money markets in the economy.

Geographical location of call money market

Call markets are located in commercial centres like Mumbai, Kolkata, Chennai, Delhi and Ahmadabad. The stock exchanges are also located in these cities. Mumbai and Kolkata dominate call market in India. Mumbai is the financial capital of India and the head offices of RBI, LIC and UTI are located there. It also has the biggest stock exchange in Asia. The development of IT has facilitated the flow of funds. The call rates are prevailing in different centres in different rates. There is a large number of local call markets developed and marketed by indigenous local bankers. For example, in Gujarat the large payments or remittances are made, the local banks charge the price of overnight money is 2 paise per hundred rupees per night.

Benefits of call money market

Call money market offers the following benefits to commercial banks:

- **a. Quick Funds:** Call money market offers the advantage of easy and quick borrowing to meet the statutory liquidity requirement of banks.
- **b. Best Investment:** Call money market facilitates effective and profitable investment of temporary surplus funds. Further, the market provides the assurance of excellent liquidity of funds invested.
- c. **Profitability:** Banks invest their surplus funds in a period when call rates are high and volatile, and maximise their profits through call money operations.

b. Treasury bill market

A market for the purchase and sale of treasury bills is known as 'Treasury Bills Market'. A treasury bill is basically an instrument of short-term borrowing by the government of India. It is particular kind of finance bill (i.e. a bill which does not arise from any genuine transactions in goods) or a promissory note issued by the RBI on behalf of the Government. The T-bills are used to raise short-term funds to bridge seasonal/temporary gaps between receipts (revenue and capital) and expenditure of the Government of India. Treasury bills are the main financial instruments of money market. The borrowings of the government are monitored and controlled by the central bank. The RBI is the agent of Union Government. They are issued by tender or tap. The bills are sold to the public by tender method up to 1965. These bills were put at weekly auctions. A treasury bill is a particular kind of finance bill. It is a promissory note issued by the government.

Thus, a kind of finance bills, which are in the nature of promissory notes, issued by the government under discount for a fixed period, not exceeding one year, containing a promise to pay the amount stated therein to the bearer of the instrument, are known as 'treasury bills'. 465

Until 1950 these bills were also issued by the state governments. After 1950 onwards the central government has the authority to issue such bills. These bills are more liquid than any other kinds of bills. The treasury bills are highly liquid because these bills are guaranteed by the central government. The RBI is always willing to purchase or discount them. These bills are claims against the government. They do not require any endorsement or acceptance. These bills are issued to meet the short-term financial requirements of the central government. These bills have become a permanent source of funds to the government. Every year in the central bank, a portion of bills are converted into long term bonds.

The treasury bills are not a source of financing budget deficit. It is a mechanism to cover day to day mismatches in receipts and payments of the central government. It implies periodic vocation of advances made and not their accumulation year after year. The RBI introduced the system of ways and means. The treasury bills are of two types, ad hoc treasury bills and regular bills.

The ad hoc treasury bills are issued in favour of RBI only. They are used by the RBI as reserve against which the Issue Department issues currency notes. In addition, they are also issued to serve the purpose of replenishing cash balances of the central government. Besides, ad hoc treasury bills provide an investment avenue to state government, semi-government departments and foreign central banks for parking their temporary surplus and for earning income. They are not marketable. Since ad hoc treasury bills are not marketable in India, the holders of these bills can always sell them back to the RBI. On the other hand, the regular treasury bills are sold to the general public, banks and other institutions for raising resources to meet the short-term financial needs of the central government. They are freely marketable. The treasury bill market in India is underdeveloped. The treasury bills markets are well developed in USA and UK. In the developed market these bills occupy a key role in their economy.

The Ad hoc treasury bills were introduced in India in 1937. The government and RBI made an agreement in 1937 and 1955 between them for functioning of the treasury bills market in India. According to this agreement, the central government shall maintain with the RBI a cash balance of not less than Rs 50 crores on friday and Rs 4 crores on other days. It involves free of obligation to pay interest there on and if the balance falls below these minimum levels the government account may be replenished by the creation

of ad hocs in favour of the RBI. These bills are financed by the created money. But these bills are quickly replaced by borrowing against dated securities from the market. The ad hoc treasury bills became permanent sources of finances for the government. These bills reduce the currency circulation in the market. These bills provide an opportunity to the state government and semi government to invest their surplus funds. These organisations helped to eliminate undesirable fluctuations in the discount rate at the treasury bills market. The ad hoc bills became the vehicle for automatic monetisation of the budget deficit. The government and the RBI entered into an agreement on September 9, 1994 to phase out the system of ad hoc bills.

Features of the treasury bills

Treasury bills incorporate the following general features:

- **a. Issuer:** Treasury bills are issued by the government for raising short-term funds from institutions or the public for bridging temporary gaps between receipts (both revenue and capital) and expenditure.
- **b. Finance Bills:** Treasury bills are in the nature of finance bills because they do not arise due to any genuine commercial transactions in goods.
- **c.** Liquidity: Treasury bills are not self-liquidating like genuine trade bills, although they enjoy higher degree of liquidity.
- **d.** Vital Resource: Treasury bills are an important source of raising short-term funds by the government.
- e. Monetary Management: Treasury bills serve an important tool of monetary management used by the central bank of the country to infuse liquidity in to the economy.

Participants in treasury bills

The participants in the treasury bills market include the Reserve Bank of India, the State Bank of India, Commercial Banks, State Governments and other approved bodies, Discount and Finance House of India as a market maker in treasury bills, the Securities Trading Corporation of India (STCI), other financial institutions such as, LIC, UTI, GIC, NABARD, IDBI, IFCI, ICICI, etc., corporate entities and general public, and Foreign Institutional Investors.

On the above mentioned participants, RBI and commercial banks are the most popular players. This essentially arises from the nature of relationship between them. Treasury bills are least popular among the corporate entities and the general public.

Categorisation of treasury bills

The treasury bills can be categorised as follows:

- a. 14 days Treasury bills
- b. 28 days Treasury bills
- c. 91 days Treasury bills
- d. 182 days Treasury bills
- e. 364 days Treasury bills

14 days Treasury bills: The 14 day T-bills has been introduced from 1996-97. These bills are non-transferable. They are issued only in book entry system they would be redeemed at par. Generally, the participants in this market are state government, specific bodies and foreign central banks. The discount rate on these bills will be decided at the beginning of the year quarter. The yield on this market is on par with the interest as ways and means. These bills are not popular in India due to some limitations. These bills are issued every week.

28 days Treasury bills: These bills were introduced in 1998. The treasury bills in India issued on auction basis. The date of issue of these bills will be announced in advance to the market. The information regarding the notified amount is announced before each auction. The notified amount in respect of Treasury bill auction is announced an advance for the whole year separately. A uniform calendar of Treasury bills issuance is also announced. The state governments have been allowed to enter into this segment for investment of their surplus funds as non-competitive bidders. They are also allowed to avail the special ways and means advances against the collateral of their investment in the bills market.

91 days Treasury bills: The 91 days treasury bills were issued from July 1965. These were issued tap basis at a discount rate. The discount rates vary between 2.5% to 4.6% P.A from July 1974, the discount rate 4.6% remained uncharged the return on these
bills were very low. However, the RBI provides rediscounting facility freely for these bills. The commercial banks also invest their surplus fund into these instruments for a short period. Generally, they will park their idle funds in these instruments for 1 or 2 days respectively. There will be high fluctuations in the volume of outstanding treasury bills. Therefore the RBI introduced measures. They are recycling of the Treasury bills and additional early rediscounting fee. The recycling of treasury bills was introduced from Oct 1986. Under this scheme the bills which were rediscounting by the RBI could be resold. Another factor is that an additional early rediscounted the Treasury bills within 14 days of purchase. The fluctuations declined in the bills market could not become an integral part of the money market.

182 days Treasury bills: The 182 treasury bills were introduced in November 1986. The Chakravarthy committee made recommendations regarding 182 day treasury bills instruments. There was a significant development in this market. These bills were sold through monthly auctions. These bills were issued without any specified amount. These bills are tailored to meet the requirements of the holders of short term liquid funds. These bills were issued at a discount. These instruments were eligible as securities for SLR purposes. These bills have rediscounting facilities. These instruments could be purchased by individual firms, companies and corporate bodies. The bill market was not emerged as part of the money market.

364 days Treasury bills: The 364 treasury bills were introduced by the government in April 1992. These instruments are issued to stabilize the money market. These bills were sold on the basis of auction. The auction for these instruments will be conducted for every fortnight. There will be no indication when they are putting auction. Therefore the RBI does not provide rediscounting facility to these bills. These instruments have been instrumental in reducing the net RBI credit to the government. These bills have become very popular in India. These bills provide higher yield with liquidity position. These instruments have widened the money market. They provide an innovative parking place for idle funds. These bills have been to auction on monthly basis since October, 1998. The RBI does not purchase these bills. The response for the bills depends upon many factors such as the uncertainty in government securities market, variations in SLR and the yield. The treasury bills market will show an impact on the functioning of banks and monetary policy of the government. The buying of treasury bills by the banks will effect on reduction of credit creating capacity of the banks. In this situation large holding of treasury bills by banks lead to dangerous situation. The banks always plan for the makeup of loss by rediscounting bills with the central bank. The banks participation in the treasury bills market has been increased due to the tight money policy of the RBI. There will be another dimension to study the treasury bills market is that, the banks which purchased the treasury bills will increase the power of deposit creation of banks. These bills are treated as securities for calculation of the SLR position.

Benefits of treasury bills

Treasury bills an important money market instruments provide the following benefits:

- **a.** Liquidity: Treasury bills command high liquidity. A number of institutions such as RBI, the DFHI, STCI, commercial banks, etc. take part in the Treasury bill market. In addition, the central bank is always prepared to purchase or discount treasury bills.
- **b.** No Default Risk: Since there is a guarantee by the central government, treasury bills are absolutely free from the risk of default of payment by the issuer. Moreover, the government itself issues the treasury bills.
- c. Availability: RBI has the policy of making available on a steady basis, treasury bills especially through the 'tap' route since July 12, 1965. This greatly helps banks and other institutions to park their funds temporarily in treasury bills.
- **d.** Low Cost: Trading in treasury bills involves less transaction cost. This is because two-way quotas with a fine margin are offered by the DFHI on a daily basis.
- e. Safe Return: The biggest advantage of the treasury bills is that they offer a steady and safe return to investor. There are not many fluctuations in the discount rate. It is also possible for the investors to earn attractive return by keeping investment in non-earning cash to the minimum and supplementing it with treasury bills.

- **f.** No Capital Depreciation: Since treasury bills command high order of liquidity, safety and yield, there is very little scope for capital depreciation in them.
- **g. SLR Eligibility:** Treasury bills are of great attraction to commercial banks as it helps them park their funds (Net Demand and Time Liabilities) as per the norms of SLR announced by the RBI from time to time. This reason makes commercial banks dominant dealers in treasury bills.
- **h. Fund Mobilization:** Treasury bills are used as an ideal tool by the government for raising short-term funds required for meeting temporary budget deficit.
- i. Monetary Management: It is possible for the government to mop up excess liquidity in the economy through the issue of treasury bills. Since treasury bills are subscribed by the investors other than the RBI, the issue would neither lead to inflationary pressure nor result in monetization.
- **j. Better Spread:** Treasury bills facilitate proper spread of asset mix with different maturity as they are available on the top basis as well as in fortnightly auctions.
- **k. Perfect Hedge:** Treasury bills can be used as a hedge against volatility of call loan market and interest rate fluctuations.
- 1. **Fund Management:** Treasury bills serve as an effective tool of fund management because of the reasons like, availability of ready market, both sale and purchase at market driven prices, facility of rediscounting treasury bills on tap basis and refinancing from the RBI, ideally suited for investment of temporary surplus, etc.

c. Commercial bill market

The corporate sector requires two kinds of capital; they are fixed capital and working capital. The fixed capital can be procured by the companies by issuing shares, term

loans from all Indian financial institutions and other long term nature of the sources. The working capital of the corporate sector is mainly provided by the banks through cash credit, overdraft, and purchase or discounting of the commercial bills. In abroad, the bill finance is the major source of income for the banks. But in India, the bill system is yet to become popular. The financing of bill method is flexibility to the money market. The financial instrument which is traded in the bill market is known as the bill of exchange. The bills are used for financing a deal in goods that takes some time to complete. The bill of exchange reveals that the liability to make the payment as a fixed date when the goods are bought on mercantile basis. The bill of exchange is treated as a negotiable instrument. The bill of exchange is drawn by the seller (drawer) on the buyer (drawee) for the value of the goods delivered by him. These bills are called as Trade bills. If the trade bills are accepted by the commercial banks, they are known as commercial bills.

A commercial bill is one which arises out of a genuine trade transaction, i.e. credit transaction. As soon as goods are sold on credit, the seller draws a bill on the buyer for the amount due. The buyer accepts it immediately agreeing to pay the amount mentioned therein after a certain specified date. Thus, a bill of exchange contains a written order from the creditor to a debtor, to pay a certain sum, to a certain person, after a certain period. A bill of exchange is a 'self liquidating' paper and negotiable. It is drawn always for a short period ranging between three months and six months. In short, the market for buying and selling of commercial bills of exchange is known as 'Commercial Bill Market'.

Section 5 of the Negotiable Instruments Act defines a bill of exchange as follows:

'An instrument in writing containing an unconditional order, signed by the maker, directing a certain person to pay a certain sum of money only to, or to the order of a certain person or to the bearer of the instrument.'

On the other hand, if the seller provides sometime for the payment the bill payable at a future date is known as Usance bill. If the seller is in need of finance he may approach the bank for discount of the bill. The commercial bank generally finances the business community through bill discounting method. The commercial banks can finance the seller at the negotiated discount rate. Therefore, the bank collects the maturity proceeds of the discounting bills from the drawee. In this situation, if the bank needs emergency funds it can rediscount the bills already discounted in the commercial bill discount market. The bill is the negotiable instrument is can change ownership conveniently during its currency. It provides a clear legal safeguard. This instrument will be treated as self-liquidating paper on the money market. The liquidity position of this instrument is being next only to cash, call loan, treasury bill and commercial bills. It carries a low degree of risk of laws. It is different from other commercial loans by banks. In the U.S the bills are known as banker's acceptance.

Types of bills

Many types of bills are in circulation in a bill market. They can be broadly classified as follows:

- a. Demand and usance bills.
- b. Clean bills and documentary bills.
- c. Inland and foreign bills
- d. Export and import bills.
- e. Indigenous bills.
- f. Accommodation and supply bills.

Demand and usance bills: Demand bills are otherwise called sight bills. These bills are payable immediately as soon as they are presented to the drawee. No time of payment is specified and hence they are payable at sight.

Usance bills are called time bills. These bills are payable immediately after the expiry of time period mentioned in the bills. The period varies according to the established trade customs or usage prevailing in the country.

Clean bills and documentary bills: When bills have to be accompanied by the documents of title to goods like railway receipt, lorry receipt, bill of lading, etc. The bills are called documentary bills. These bills can be further classified into D/A bills and D/P bills. In the case of D/A bills, the documents accompanying bills have to be delivered to the drawee immediately after his acceptance of the bill. Thus, a D/A bills become a clean bill

immediately after acceptance. Generally, D/A bills are drawn on parties who have a good financial standing.

On the other hand, the documents have to be handed over to the drawee only against payment in the case of D/P bills. The documents will be retained by the banker till the payment of such bills. When bills are drawn without accompanying any document they are called clean bills. In such a case, documents will be directly sent to the drawee.

Inland and foreign bills: Inland bills are those drawn upon a person resident in India and are payable in India. Foreign bills are drawn outside India and they may be payable either in India or outside India. They may be drawn upon a person resident in India also. Foreign bills have their origin outside India.

Export and import bills: Export bills are those drawn by the Indian exporters on importers outside India and import bills are drawn on Indian importers in India by exporters outside India.

Indigenous bills: Indigenous bills are those drawn and accepted according to native custom or usage of trade. These bills are popular among indigenous bankers only. In India, they are called hundis. The hundies are known by various names such as, 'Shahjog', 'Namjog', 'Jokhani', 'TermainJog', 'Darshani', 'Dhanijog' and so on.

Accommodation and supply bills: If bills do not arise out of genuine trade transactions, they are called accommodation bills. They are known as 'kite bills' or 'wind bills'. Two parties draw bills on each other purely for the purpose of mutual financial accommodation. These bills are discounted with bankers and the proceeds are shared among themselves on the due dates they are paid.

Supple bills are those drawn by suppliers or contractors on the government departments for the goods supplied by them. These bills are neither accepted by the departments nor accompanied by documents of title to goods. So, they are not considered as negotiable instruments. These bills are useful only for the purpose getting advances from commercial banks by creating a charge on these bills.

Importance of commercial bill market

Commercial bill market is an important source of short-term funds for trade and industry. It provides liquidity and activates the money market for its development in the following ways: 474

- a. Ideal Source of Credit: Bill financing is considered to be the most common method of meeting the short-term credit needs of the trade and industry. It is quite possible for even banks to rediscount the bills in their possession. In this manner, banks are able to meet their short-term liquidity requirements.
- **b. High Liquidity:** Commercial bills are highly liquid assets. Such bills have a fixed and short tenure of maturity. In times of necessity, bills can be converted into cash readily by rediscounting them with the central bank.
- c. Certainty of Payment: Bills are drawn and accepted by business people. As the payment must be made on the due date of the bill, the use of commercial bills as an instrument of credit imposes financial discipline on the borrowers. Hence, bills would be honored on the due date.
- **d.** Self-liquidating and negotiable asset: Bills are self-liquidating in character since they have a fixed tenure. Moreover, they are negotiable instruments and hence they can be transferred freely by mere delivery.
- e. Ideal Investment: Bills are of period not exceeding 6 months. They represent advances for a definite period. This enables financial institutions to invest their surplus funds profitably by selecting bills of different maturities. For instance, commercial banks can invest their funds on bills in such a way that the maturity of these bills can coincide with the maturity of their fixed deposits.
- **f. Flexibility:** An important function of an efficient bill market is that it imparts flexibility to the money market by functioning as its effective constituent. The bill market helps ease out liquidity crunch in the banking system.
- **g. Simple Legal Remedy:** In case the bills are dishonoured, the legal remedy is simple. Such dishonoured bills have to be simply noted and protested and the whole amount should be debited to the customer's accounts.
- h. High and Quick Yield: The financial institutions earn a high and quick yield. The discount is deducted at the time of discounting itself, whereas in the case of other loans and advances, interest is payable only when it is due. The discount rate is also comparatively high.

i. Central Bank Control: The central bank can easily influence the money market by manipulating the bank rate or the rediscounting rate. Suitable monetary policy can be taken by adjusting the bank rate depending upon the monetary conditions prevailing in the market.

Drawbacks/ shortcomings of the Indian bill market

In spite of the merits, the bill market has not been well developed in India. There are many reasons as to why the Indian bill market remains in a state of underdevelopment. They are briefly explained below:

- a. Lack of Bill culture: The trade and industry and the government departments are reluctant to move towards the bill culture, which requires observance of strict financial discipline, particularly on the part of the borrower. Business people in India prefer OD and cash credit to bill financing. Therefore, banks usually accept bills for the conversion of cash credits and overdraft of their customers. Hence, bills are not popular.
- b. Absence of rediscounting among them: There is no practice of rediscounting of bills among banks that need funds and those who have surplus funds. In order to enlarge the rediscounting facility, the RBI has permitted financial institutions like, LIC, UTI, GIC and ICICI to rediscount genuine eligible trade bills of commercial banks. Even then, bill financing is not popular.
- c. Stamp Duty: In respect of transactions involved in making of bills of exchange there is a necessity of affixing stamp on each bill. Many a time, stamp papers of required denomination are not available. Besides, the amount of stamp duty is also high.
- **d. Inadequate Credit Rating:** Credit Rating in India is of recent origin. Services of specialized and expert credit investigating agencies are not adequately available so as to facilitate valid judgment about the credibility of the parties concerned. Further, credit rating has also become expensive.
- e. Absence of Active Secondary Market: Secondary market for bills is an important requirement for the development of an efficient bill market. Facilities such as rediscounting, etc are available only with the apex level financial institutions, thus the

curtailing the size of the bill market. Further, the bill acceptance service in commercial bill market has been very much restricted. Similarly, rediscounting facility is available only at Mumbai, Kolkata, Delhi, Chennai, Ahmedabad, Bangalore, Hyderabad, Nagpur, Kanpur and Patna.

- **f.** Administrative Problems: There are many administrative problems, which are faced by players in the bill market. These include physical scrutiny of invoices accompanying bills to ensure that they are trade related, physical presentation of bills for repayment and requirement of physical endorsement and re-endorsement of bills at the time of rediscount.
- **g.** Limited foreign trade: Whereas a bill market is required to be constituted for the purpose of financing foreign trade, it is unfortunate that the development in the volume of international trade transactions in India is relatively small and restricted. For example, in India, foreign trade as percentage to national income has always remained small which has contributed to the small size of bill market.
- Attitude of Banks: Attitude of commercial banks towards bill financing leaves much to be desired. Banks are shy of rediscounting bills even with the central bank. They have a tendency to hold the bills till maturity and hence it affects the velocity of circulation of bills. Again, banks prefer to purchase bills instead of discounting them.
- i. Lukewarm Government Support: There has been a lukewarm support from the government in encouraging the practice of bill financing. A large part of the trading activity at the government level in India is carried on through public sector units like STC, MMTC, FCI, etc. Unfortunately, the government does not prefer financing its activities through commercial bills.

j. Unorganised Nature

Indian bill market is plagued by the problem of wide spread presence of indigenous bankers and money lenders. Their dominating presence has led to nefarious practices , thus choking the growth of bill market.

d. Commercial paper market

During the 1980s, a wave of financial liberalisation and innovation in financial instruments swept across the world. A basic feature of the many innovations is the trend towards securitisation, i.e., raising money direct from the investors in the form of negotiable securities as a substitute for bank credit. The companies found it cheaper to borrow directly from public by way of short-term paper. The cost of fund is cheaper for the companies as it involved lower information and transaction cost. This also suits the interest of many investors as it provides them with a wide spectrum of financial instruments to choose from and in placing their funds at reasonably high rates of return. Commercial paper is a new instrument used for financing working capital requirements of corporate enterprises.

Commercial paper is one of the financial instruments of the money market. It provides an opportunity to well rated companies /good track record companies for raising funds on short-term basis. The market always provides funds to sincere companies which maintain financial discipline enabling them to procure funds confidently. In the financial market credibility is the most important factor at present. The financial discipline leads to credibility; the credibility has the borrowing capacity from the market. In the recent period many good reputed companies have accursed the commercial paper market for meeting their working capital requirements.

Commercial paper is an un secured provisionary note issued with a fixed maturity by a company approved by RBI, negotiable by endorsement and delivery, issued in bearer form and issued at such discount on the face value as may be determined by the issuing company .They are generally issued by well rated companies for a minimum of three months and maximum of six months. They are regulated by non-banking companies' directions. Those directions were issued by RBI in 1989. The directions come into force on 1-1-1990. Hence, debt instruments that are issued by corporate houses for raising

short-term financial resources from the money market are called commercial papers.

Features of commercial paper

The salient features of Commercial Paper are as follows:

- a. Commercial papers are un-secured debts of corporate
- b. Commercial Papers are issued in the form of promissory notes.
- c. Commercial Papers are redeemable at par to the holder at maturity.
- d. The issue company shall have current ratio 1.33:1.
- e. Commercial Papers attract stamp duty.
- f. The market for the Commercial Papers comprises of issues made by the public and private sector enterprises.
- g. The minimum issue shall be rupees twenty 5 lacs.
- h. They have maturity period from 90 days to 180 days.
- i. The issuer company shall have tangible net wealth of rupees 5 crores.
- j. The discount value may be decided by the issuing company.
- k. They require floating expenses.
- 1. The rate of interest applicable to commercial papers varies greatly.
- m. They may be issued to individuals, banks, companies registered, corporate bodies and union corporate bodies.
- n. They are issued to NRIs on non-repatriable basis.
- o. The marketability of the Commercial Papers is influenced by the rates prevailing in the call money market and foreign exchange market.

Participants of commercial paper market

Commercial paper is a money-market security issued (sold) by large corporations to get money to meet short term debt obligations (for example, payroll), and is only backed

by an issuing bank or corporation's promise to pay the face amount on the maturity date. In India, the participants of commercial paper are:

Issuers: All private Sector Company, public sector units, non-banking companies, etc.

Investors: Individuals, banks, corporate and also NRIs. Usually, banks, large corporate bodies and public sector units with investible funds participate in commercial paper market.

Advantages of commercial paper

The advantages of commercial paper market are:

- **a. Simplicity:** The advantage of commercial paper lies in its simplicity. It involves hardly any documentation between the issuer and investor.
- **b. Flexibility:** The issuer can issue commercial paper with the maturities tailored to match the cash flow of the company.
- c. **Diversification:** A well rated company can diversity its source of finance from the banks to short-term money markets at somewhat cheaper cost.
- **d.** Easy to raise long-term capital: The companies which are able to raise funds through commercial paper become better known in the financial world and are thereby placed in a more favourable position for raising such long-term capital as they may, from time-to-time, require. Thus, there is an inbuilt incentive for companies to remain financially strong.
- e. **High Returns:** The commercial paper provides investors with higher returns than they could get from the banking system.
- **f. Movement of Funds:** Commercial paper facilitates securitization of loans resulting in creation of a secondary market for the paper and efficient movement of funds providing cash surplus to cash deficit entities.

Disadvantages of commercial papers

Though Commercial Papers have some advantage but they have some limitations also:

- a. Its usage is limited to only blue chip companies.
- b. Issuances of Commercial Paper bring down the bank credit limits.

- c. A high degree of control is exercised on issue of Commercial Paper.
- d. Stand-by credit may become necessary.
- e. The incorporate lenders and borrowers would prefer to tax free bonds rather than commercial papers.
- f. Commercial papers are likely to prove restrictive, time consuming and costly.

Commercial paper market in india

Commercial Paper in India is a new addition to short-term instruments in Indian Money market since 1990 onward. The introduction of Commercial paper as the short-term monetary instrument was the beginning of a reform in Indian Money market on the background of trend of Liberalization which began in the world economy during 1985 to 1990. A commercial paper in India is the monetary instrument issued in the form of promissory note. It acts as the debt instrument to be used by large corporate companies for borrowing short-term monetary fund in the money market. An introduction of Commercial Paper in Indian money market is an innovation in the financial system of India. Prior to injection of Commercial Paper in Indian money market i.e. before 1990, the corporate companies had to depend upon the crude and traditional method of borrowing working capital from the commercial banks by pledging the inventory of raw materials as collateral security. It involved more loss of time for the borrowing companies in availing the short-term funds for day-to-day production activities. The commercial paper has become effective instrument for these corporate companies to avail the short-term funds from the money market within shortest possible time limit by avoiding the hassles of direct negotiation with the commercial banks for availing the short-term loans.

Commercial Paper market had relatively higher growth from 1997-98 onward. On October 15 1997, total outstanding amount on Commercial paper transaction in Indian money market was Rs. 3377 crore. This outstanding amount increased substantially to Rs. 1,28,347 crore on July 15, 2011. This growth of Commercial paper market may be attributed to the rapid expansion of corporate manufacturing and financial companies in liberalised and Globalised Indian economy during the last decade of 20th century and the first decade of 21st century. The growth of Commercial Paper market in India was more

conspicuous after the financial year 2007-08. On 15 July, 2007, total outstanding amount on Commercial paper transaction was Rs. 28,129 crore. This amount increased to Rs. 48,342 crore on 15 July, 2008. Since then, there was substantial increase in the outstanding amount on Commercial paper transactions to the highest level of Rs. 1,28,347 until 15 July, 2011. This period was largely dominated by the late 2000s financial crisis. In this period, RBI reduced Repo rate drastically from 9% to 4%. However, Prime rate of commercial banks in India remained rigid at 12%. The discounting rate on Commercial papers was in the range of 6.5% to 10% in October 2010. It is explicit from these statistics that the cost of borrowing working capital through Commercial paper transaction became relatively lower for the corporate companies in India in comparison to the cost of borrowing the same working capital through cash credit facility from the commercial banks. The obvious result was an absolute growth of the Commercial paper market in India, particularly, after 2007-08 onward.

e. Certificate of deposits Certificate of deposit means, an amount of money deposited in a bank for a specified period at a specified rate of interest. The concerned bank will issue a receipt which is transferable and marketable in the market. The receipt may be either in bearer form or in registered form. They are the documents of time to time deposit with the banks. Technically they are the part of a banks time deposit. These are riskless in terms of payment of interest and principal amount. Therefore, Certificate of deposits are the short-term deposit instruments issued by banks and financial institutions to raise large sums of money. They are issued in the form of usance promissory notes. They are negotiable and are in marketable form bearing specific face value and maturity. They are transferable from one party to another.

The scheme of certificate of deposits has been introduced by the RBI in June 1989. This financial instrument has been introduced in order to widen the money market and its instruments. This scheme provides greater flexibility in the parking of their idle funds. The certificate of deposits can be issued only by the scheduled commercial banks. These will be used in multiples of 25 lakhs. The minimum period size of the issue is Rs. 1 crore. The maturity period will vary between 3 months and 1 year. It will be issued at a discount to face value. The discount rate will be freely determined according to the situation. It will be freely transferable by endorsement. They are

subject to stamp duty. The RBI is the supreme authority in this segment. The RBI prescribes a limit to each bank for funds to rise under this scheme. It is a negotiable instrument. It provides maximum liquidity. The DFHI dominates the trading in certificate deposits in market. These instruments have large size of market in primary but there is no room for the secondary market. Liquidity and marketability is the hallmark of these instruments. They are in bearer form. They are known as negotiable instruments. They are also called negotiable certificate of deposit.

The certificate of deposits has been introduced by many developed and developing countries. They were introduced in 1961 in the US and UK. The certificate of deposits in the form of dollars were issued in 1966 and pounds in 1968. The certificate of deposits has been emerged in many countries based on different forces and factors. They have emerged for widening the money market in many countries. They have been introduced to restore intermediation function of banks, to strengthen the market, to innovative financial system, to mop up excess liquidity in the monetary system and as a part of financial reforms. They will be treated in global markets as Euro Certificates of Deposits. They are issued in different countries to meet the competition. They have some advantages over the time deposit. The banks issued them as competitive tools against other financial intermediaries.

Features of certificate of deposits

Certificate of deposits possess the following distinguishing characteristics:

- a. Negotiable Instruments: Certificate of deposits are negotiable term-deposit certificates issued by commercial banks/ financial institutions at discount to face value at market rates. The Negotiable Instruments Act governs certificate of deposits.
- **b.** Maturity: The maturity period of certificate of deposits range from 15 days to one year.
- c. Nature: Certificate of deposits is in the form of usance promissory notes and hence easily negotiated by endorsement and delivery.

- **d. Ideal source:** Certificate of deposits constitutes a judicious source of investment as these certificates are the liabilities of commercial banks/financial institutions.
- e. Issuance: Certificate of deposits is issued at discount to face value.
- f. Stamp Duty: Certificate of deposits is subject to stamp duty like usance of promissory notes.

Advantages of certificate of deposits

The Scheme of certificate of deposits has been in operation for almost six years now. The main advantages of certificate of deposits are:

- **a.** Certificate of deposits are the most convenient instruments to depositors as they enable their short-term surpluses to earn higher returns.
- **b.** Certificate of deposits also offer maximum liquidity as they are transferable by endorsement or delivery. The holder can resell his certificates to another.
- c. From the point of view of issuing bank, it is a vehicle to raise resources in time of needs and improve their lending capacity. The Certificate of deposits is fixed term deposits which cannot be withdrawn until the redemption date.
- **d.** Certificate of deposits is an ideal instrument for banks with short term surplus funds to invest at attractive rates.

Impediments of certificate of deposits

Certificate of deposits market are the market for the purchase and sale of certificate of deposits. It is an important constituent of the money market. The reasons for slow growth are Certificate of deposits are as follows:

a. Stamp Duty: The certificate of deposits is subject to stamp duty applicable to usance promotes. Besides, the cost involved which is anywhere between 0.5% and 1% p.a. which makes the Certificate of deposits less attractive, there are practical problems such as, non availability of stamps of required denomination, the time involved in getting the Certificate of deposits stamped due to procedural delays at the stamp office, etc. There is, therefore an immediate need for revamping stamp duty on Certificate of deposits if this instrument is to become popular.

b. Development of Secondary Market: There is a need for developing an active and liquid secondary market for certificate of deposits. The Discount and Finance House of India Ltd., has been designated to trade in the certificate of deposits in the secondary market.

In spite of DFHI intending to trade in certificate of deposits for which it is publishing its daily discounts rates in the press and also individually approaching the issuing banks, the secondary market in this instrument has yet to gather momentum.

c. Lock-in-Period: The minimum lock-in-period of 45 days is yet another problem. Removal of this stipulation may go a long way in popularizing certificate of deposit scheme.

20.18 SUMMARY

Earnings are the powerful indicators of the firms' business activities. Since a company's stock is measured by the present value of its future earnings, investors and analysts look to earnings to determine the attractiveness of a particular stock. Companies with poor earnings prospects will typically have lower share prices than those with good prospects. So, Earnings management plays a key role to determine the share price of a company as well as direct resource allocation in capital market. The receivables emerge when goods are sold on credit and the payments are deferred by the customers. So, every firm should have a well-defined credit policy. The receivables management refers to managing the receivables in the light of costs and benefit associated with a particular credit policy. Receivables management involves the careful consideration of the following aspects: Forming of credit policy, Executing the credit policy, Formulating and executing collection policy. The credit policy deals with the setting of credit standards and credit terms relating to discount and credit period. The credit evaluation includes the steps required for collection and analysis of information regarding the credit worthiness of the customer.

Money market is an important constituent of the banking and financial system of a country. It is concerned with the demand for and supply of short-term funds of individuals, firms, governments and others. It does investing, financing and facilitating functions and thereby facilitates effective monetary management of a country. An important constituent of the Indian money market, the call money market focuses its attention on providing an ideal trading arrangement for the very short period instruments, namely, the money at call and short notice. Call money market is a sensitive organ of the financial system in the sense that any change in the demand and supply of short-term funds is quickly reflected in this market. The biggest advantage offered by the call money market is that it facilitates easy and quick transfer of funds with benefits of liquidity.

20.19 GLOSSARY

- **Bazar reports:** Reports about the applicant can be obtained from the various markets, particularly from businessmen carrying on the same trade.
- **Credit analysis:** credit analysis involves the credit investigation of potential customer to determine the degree of risk associated with the account.
- **Credit character**: 'Credit character' refers to reputation of the applicant in meeting obligations of the company upon maturity.
- **Capacity:** It measures the ability of the 'potential customer' to utilise the loan effectively and profitably.
- **Capital:** represents the general financial position of the customer's firm with special emphasis on tangible net worth and profitability (which indicates ability to generate funds for debt repayment).
- **Collateral**: It is represented by assets which may be offered as pledge against credit extension.
- **Money Market:** The money market is a component of the financial markets for assets involved in short-term borrowing, lending, buying and selling with original maturities of one year or less.
- **Statutory Liquidity Ratio:** Statutory Liquidity Ratio refers to the amount that the commercial banks require to maintain in the form of gold or govt. approved securities before providing credit to the customers.
- **Cash Reserve Ratio:** The reserve requirement (or cash reserve ratio) is a central bank regulation that sets the minimum fraction of customer deposits and notes that each commercial bank must hold as reserves.

- **Call Money Market:** The call money market deals in short term finance repayable on demand, with a maturity period varying from one day to 14 days.
- **Monetary Policy:** Monetary policy is the process by which the monetary authority of a country controls the supply of money, often targeting a rate of interest for the purpose of promoting economic growth and stability

20.20 SELFASSESSMENT QUESTIONS

1. What do you understand by Receivables Management? Discuss the factors which influence the size of receivables?

2. What should be the considerations in forming a credit policy?

3. What are the benefits of short term sources of finance?

4. Discuss the various aspects or dimensions of receivable management?
5. Write short note on Credit Terms.

20.21 LESSON END EXERCISE

1. Is the market for Treasury bills is extremely deep and liquid and occasionally, investors find that earnings on T-bills do not compensate them. If yes, Illustrate it with relevant reasons.

2. Explain the terms a) Credit policy and b) Credit analysis.

3. Describe the various techniques of earnings management.

20.22 SUGGESTED READINGS

- I.M.Pandey, Financial Management, Vikas Publisher.
- M.Y.Khan, Financial Management, Tata McGraw Hill
- Khan & Jain, Financial Management, Tata McGraw Hill

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