

***CENTRE FOR DISTANCE & ONLINE EDUCATION***

**UNIVERSITY OF JAMMU  
JAMMU**



**SELF LEARNING MATERIAL  
OF**

**FINANCIAL MANAGEMENT**

**For the examination to be held in 2025 onwards**

**M.Com Semester II  
Course No. : MCOMC252**

**Unit: I - IV  
Lesson No. 1-20**

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<http://www.distanceeducationju.in>

Printed and Published on behalf of the Centre for Distance & Online Education,  
University of Jammu, Jammu by the Director, CDOE, University of Jammu, Jammu

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# FINANCIAL MANAGEMENT

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Printed at:

**CENTRE FOR DISTANCE AND ONLINE EDUCATION**  
**UNIVERSITY OF JAMMU**  
**M.COM. Semester – II (NON-CBCS)**  
**FINANCIAL MANAGEMENT**  
**(Core Course)**

**Course: MCOMC252**  
**Credit: 4**  
**Time: 3.00 Hrs.**

**Max Marks: 100 Marks**  
**External: 70 Marks**  
**Internal: 30 Marks**

**(Syllabus for the examinations to be held in May 2026, 2027, 2028)**

**COURSE OBJECTIVES**

1. To describe the basics financial management.
2. To explain the techniques of capital budgeting and different cost of capital.
3. To discuss the implications of leverages and approaches of capital structure.
4. To acquaint the students about dividend policy and working capital management.

**COURSE OUTCOMES**

After the completion of this course, the students will be able to:

1. familiarise with the role and challenges faced by the finance manager;
2. understand the evaluation of capital expenditure and cost of various sources of finance;
3. able to compute various types of leverages and its impact on value of the firm;
4. know the various models of dividend and sources of short-term financing;
5. provide consultation for managing the funds efficiently for enhancing net worth.

**UNIT I OVERVIEW OF FINANCIAL MANAGEMENT**

Concept and scope of financial management; Inter-relation among investment, financing and dividend decisions; Concept of cash flow and time value of money; Risk- return framework for financial decision making; Objectives of financial management; Role and challenges faced by finance manager; Financial planning and forecasting; Ethics in finance.

**UNIT II CAPITAL BUDGETING & COST OF CAPITAL**

Capital budgeting - Concept, nature, importance, process and techniques of capital budgeting: payback period, accounting rate of return, net present value, internal rate of return and profitability index; Cost benefit analysis in capital budgeting; Cost of capital - Concept, importance, explicit cost and implicit cost; Measurement of specific cost of capital - cost of debt, cost of equity capital, cost of preference shares capital, and cost of retained earnings; Overall cost of capital.

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**UNIT III LEVERAGES & CAPITAL STRUCTURE**

Leverages - Concept, types and applications of leverages, computation of operating leverage, financial leverage and combined leverage, importance and limitations of leverage analysis; Capital structure - Concept, assumptions, optimum capital structure; approaches of capital structure - net income, net operating income, traditional approach, MM hypothesis, designing capital structure; Critical appraisal of various sources of finance.

**UNIT IV DIVIDEND DECISIONS & WORKING CAPITAL MANAGEMENT**

Dividend decisions – Concept, types and factors determining dividend policy; Dividend models – Walter model, Gordon model and MM Model; Working capital - Concept; need and factors influencing working capital, operating cycle approach to working capital; Cash management; Inventory management – Concept, types and techniques of inventory management; Receivables management; Critical appraisal of short-term sources of finance.

**Suggestive Readings**

1. Horne, J. C. Financial Management and Policy, Prentice Hall of India, New Delhi.
2. Brealey R.A., Myers, S.C. Principles of Corporate Finance, Tata Mc Graw Hill, New Delhi.
3. Chandra, P. Financial Management: Theory and Practice, Tata Mc Graw Hill, New Delhi.
4. Khan, M. Y. & Jain, P. K. Financial Management, Tata McGraw Hill, New Delhi.
5. Pandey, I. M. Financial Management, Vikas Publishing, New Delhi.
6. Arthur, J. K., Martin, J. H., Petty, W., Scott, D. F. Financial Management: Principles & Application, Pearson, New Delhi.
7. Srivastava, R., Misra, A. Financial Management, Oxford University Press, New Delhi.

**Note for Paper Setting:**

External (End Semester) Assessment will comprise of 70 Marks.

The Question Paper will be divided into two sections, covering whole of the syllabus.

**Section A:** This section will comprise of 4 questions of short answer type from all four units, selecting one from each unit. All questions will be compulsory and each question will carry 5 marks. (4 x 5 = 20 marks)

4

**Section B:** This section will comprise of six questions of long answer type from all four units, selecting atleast one question from each unit. Students will be required to attempt any 5 questions and each question will carry 10 marks. (5 x 10 = 50 marks)



Dear Learners,

Welcome to the Self-Learning Material (SLM) for the subject **Financial Management** offered under the M.Com Distance Education Programme. This material has been carefully prepared to provide you with a comprehensive understanding of financial principles, tools, and decision-making techniques essential for effective business management.

Financial Management is a core area of study that focuses on the planning, organizing, directing, and controlling of financial activities such as procurement and utilization of funds. The content in this SLM covers vital topics including time value of money, capital budgeting, cost of capital, working capital management, dividend policy, and financial analysis.

This SLM is designed to support your independent learning with well-structured units, clear objectives, practical examples, illustrations, and self-assessment questions. It encourages you to think critically and apply financial theories to solve real-world business problems.

We hope this material serves as a valuable resource in your academic journey and helps you build a strong foundation in financial decision-making and strategic planning.

Wishing you success in your studies and future endeavors!

**CDOE**  
**University of Jammu**

# FINANCIAL MANAGEMENT

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## **OVERVIEW OF FINANCIAL MANAGEMENT**

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**Lesson No. 1**

**Unit-I (Credit-1)**

**Semester-II**

**MCOMC252**

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### **CONCEPT AND SCOPE OF FINANCIAL MANAGEMENT INTER-RELATION AMONG INVESTMENT, FINANCING AND DIVIDEND DECISIONS**

#### **STRUCTURE**

- 1.0 Learning Objectives and Outcomes
- 1.1 Introduction
- 1.2 Meaning of Business Finance
- 1.3 Concept of Financial Management
- 1.4 Evolution of Financial Management
- 1.5 Elements of Financial Management
- 1.6 Inter-Relation among Investment, Financing and Dividend Decisions
- 1.7 Nature of Financial Management
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## 1.0 LEARNING OBJECTIVES AND OUTCOMES

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### Learning Objectives

The objective of this lesson is to enable the students:

- to understand the meaning and evolution of financial management
- to apprehend elements, nature and importance of financial management and
- enrich them about various types of firm's financial decisions.

### Learning Outcomes

After reading this lesson student will be able to:

- comprehend the basic knowledge of financial management
- know about the scope, attributes and significance of financial management and
- understand various decisions taken by financial manager.

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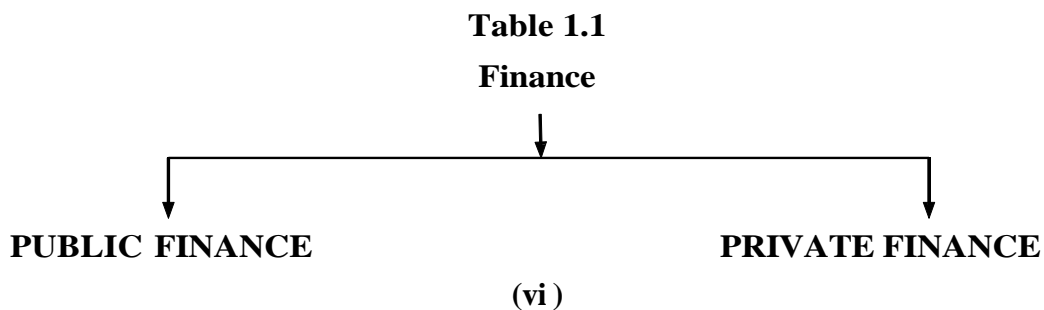
## 1.1 INTRODUCTION

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Dear students as we all know that in the 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:

1. Public Finance
2. Private finance



- **Government Institutions**
- **State Governments**
- **Local Self Governments and Central Government**

- **Personal Finance**
- **Business Finance**
- **Finance of Non-Profit organizations**

As cleared from the above table, public finance deals with the requirements, receipts and disbursement of funds in the government institutions at state, local 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.

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## **1.2 MEANING OF BUSINESS FINANCE**

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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.

After studying 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 proprietary Finance
- (b) Partnership firms finance
- (c) Company or Corporation Finance

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### 1.3 CONCEPT OF FINANCIAL MANAGEMENT

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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 so 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:

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

Thus, 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.

#### **Definitions:**

(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”.

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#### **1.4 EVOLUTION OF FINANCIAL MANAGEMENT**

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Financial management emerged 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.

1. 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.
2. The 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.
3. The post-world war II era necessitated reorganization of industries and the need for selecting sound finance structure
4. 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
5. The modern phase began in mid-fifties and the discipline of financial management has now become more analytical and quantitative.
6. 1960's witnessed phenomenal advances in the theory of 'portfolio analysis by Microwitz, Sharpe, etc.
7. 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.
8. The 'Option pricing Theory' was also developed in the form of the Binomial Model and Black-Scholes model during this period.
9. The role of taxation in personal and corporate finance was emphasized in 80's



10. Further new capital market instruments like PCD's, FCD's, etc. were also introduced.
11. 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.
12. The techniques of models, mathematical programming and simulations are presently being used in financial management and it has achieved the prime place of importance.

Thus, we can conclude that financial management has evolved from a branch of economics to a distinct subject of detailed study of its own.

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## **1.5 ELEMENTS OF FINANCIAL MANAGEMENT**

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

1. Financial Planning
2. Financial Control
3. 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:

1. Are assets being used efficiently?
2. Are the business's assets secure?
3. 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:

1. 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.
2. 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.

**A. CHECK YOUR PROGRESS**

**Multiple choice Based Questions**

1. Which of the following was the primary focus of financial management during the traditional phase (before 1950s)?
  - a) Profit maximization
  - b) Wealth maximization
  - c) Risk management
  - d) Corporate governance
2. The modern phase of financial management emphasizes:

- a) Short-term decision-making
  - b) Wealth maximization and risk management
  - c) Solely dividend distribution
  - d) Ignoring financial planning
3. In which decade did financial management start integrating risk analysis and capital structure theories?
- a) 1920s
  - b) 1950s
  - c) 1970s
  - d) 1990s
4. Which of the following is a key characteristic of the contemporary phase of financial management?
- a) Focus on shareholder value and financial innovations
  - b) Emphasis only on internal funding
  - c) Complete neglect of risk assessment
  - d) Avoidance of globalization trends
5. The concept of "Agency Theory" in financial management evolution primarily deals with:
- a) Relationship between owners and employees
  - b) Conflict of interest between managers and shareholders
  - c) The impact of inflation on financial planning
  - d) The study of financial markets only

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## **1.6 INTER-RELATION AMONG INVESTMENT, FINANCING AND DIVIDEND DECISIONS**

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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 in order to maximize shareholder's wealth like kind of assets to be acquired, pattern of capitalization etc. we can classify these decisions into three major groups:

- (a) Investment decisions
  - (b) Financing decisions
- (vi)

(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 is also concerned with 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:

1. It must maximize the value of the firm, after considering the amount of risk the company is comfortable with risk aversion.
2. It must be financed appropriately.
3. If there is no investment opportunity that fulfils the above two criteria, 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 a company. When a company goes public, for example, they decide to sell their company to the public instead of selling 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 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 -

1. Free-cash flow,
2. Dividend clienteles and
3. 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 clientele 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.

## **B. CHECK YOUR PROGRESS**

### **Case Study on Financial Decisions**

XYZ Ltd. is a mid-sized manufacturing company specializing in home appliances. The company has been in business for 15 years and has maintained stable growth. However, in recent years, competition has increased, and the company needs to make critical financial decisions to ensure future growth and profitability. The company pursues the investment, financing and dividend decisions after taking into consideration the following;

Investment Decision (Capital Budgeting)

XYZ Ltd. has two options for expansion:

- **Option A:** Set up a new production facility requiring an investment of ₹50 crore. It will increase production capacity but involves a longer payback period.
- **Option B:** Upgrade existing facilities with an investment of ₹30 crore. This option has a shorter payback period but may not provide long-term competitive advantages.

## 2. Financing Decision

To finance the expansion, XYZ Ltd. considers:

- **Debt Financing:** Taking a loan at 10% interest from a bank.
- **Equity Financing:** Issuing additional shares, which could dilute existing ownership but reduce debt burden.
- **Internal Financing:** Using retained earnings, which limits risk but may reduce funds for other operational needs.

## 3. Dividend Decision

The company traditionally distributes 40% of its profits as dividends. However, to fund expansion, management is considering reducing the dividend payout and reinvesting more in the business. This could affect investor confidence.

## Challenges & Considerations

- High debt could increase financial risk.
- Issuing new shares may impact existing shareholders' control.
- Cutting dividends may lead to dissatisfaction among investors.
- A wrong investment decision could impact long-term profitability.

Suggest how and what criteria the company will consider while making its financing decisions.

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## 1.7 NATURE OF FINANCIAL MANAGEMENT

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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

(vi)

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. Financial Management can be simply defined as the task of providing funds needed by the business or enterprise on terms that are most favourable in the light of its objectives. It is concerned almost exclusively with the procurement of funds and could be widened to include instruments, institutions and practices through which funds can be raised. 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. It is also assumed 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. The widely accepted definition of Financial Management consider it 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

(vi)



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.

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## **1.8 SCOPE OF FINANCIAL MANAGEMENT**

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

- a. Procurement of short term and long-term funds from financial institutions.
- b. Mobilization of funds through financial instruments such as equity shares, preference shares, debentures shares, bonds, notes and so forth.
- c. 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, it 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 financial manager needs 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 long term asset, short term fixed assets & current assets. Capital budgeting decisions are 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 firm has to pay dividend to its shareholders to retain their investments. The financial manager is responsible for paying dividend to its shareholders without damaging the financial 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.

### C. CHECK YOUR PROGRESS

#### Fill in the Blanks

- 1) Financial management primarily focuses on \_\_\_\_\_ maximization to ensure the long-term growth and profitability of a business.
- 2) The three key decisions in financial management are investment decisions, financing decisions, and----- decisions.
- 3) The scope of financial management extends to areas such as financial planning, risk management, and----- allocation to optimize business resources.

## 1.9 LET US SUM UP

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So learners at the end of this lesson you must have understood that , finance is the life blood of an enterprise and its management is very crucial for success of any organization. Due to its importance in an organization, financial management emerged 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.

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### 1.10 KEYWORDS

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

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### 1.11 SELF ASSESSMENT QUESTIONS

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

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Q2. Explain the various types of financial decisions?

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Q3. What are the elements of financial management?

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Q4 Explain the evolution of financial management?.

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### **1.12 LESSON END EXERCISE**

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Q.1 Define business finance

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Q.2 Enumerate the objective of financial management.

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### **1.13 ANSWER KEY**

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#### **Check Your Progress A**

- a) Profit maximization
- b) Wealth maximization and risk management
- c) 1970s
- a) Focus on shareholder value and financial innovations
- b) Conflict of interest between managers and shareholders

#### **Check Your Progress C**

- 1. Wealth
- 2. Dividend
- 3. Capital

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### **1.14 SUGGESTED READINGS**

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- Khan, M.Y, and P.K. Jain, (2018). *Financial Management*, 8<sup>th</sup> Edition, McGraw Hill.
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## **OVERVIEW OF FINANCIAL MANAGEMENT**

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**Lesson No. 2**

**Unit-I (Credit-1)**

**Semester-II**

**MCOMC252**

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### **CONCEPT OF CASH FLOW AND TIME VALUE OF MONEY**

#### **STRUCTURE**

2.0 Learning Objectives and Outcomes

2.1 Introduction

2.2 Concept of Time Value of Money

2.3 Cash flow and other concepts used in Time Value of Money

2.4 Importance of Time Value of Money Reasons of Time Value of Money

2.5 Techniques of Time Value of Money

2.6 Let Us Sum Up

2.7 Keywords

2.8 Self-Assessment Questions

2.9 Lesson End Exercise

2.10 Answer Key

2.11 Suggested Readings



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## 2.0 LEARNING OBJECTIVES AND OUTCOMES

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### Learning Objectives

The objective of this lesson is to enable the students:

- to gain the meaning of cash flow
- to understand the concepts involved in time value of money and
- to apprehend the techniques of time value of money.

### Learning Outcomes

After completing this lesson student will be able to:

- to grab the understanding of cash flow
- to apply the techniques of time value of money
- to know the significance of discounting and compounding techniques

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## 2.1 INTRODUCTION

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Dear learners you must have heard that a rupee today is worth more than a rupee tomorrow. Did you imagine, why is it so? This can be easily understood with an example. Ajay's grandfather decided to gift him rupee one lakh (1,00,000) at the end of five years; and gave him a choice of having ₹ 75,000 today. Had you been in Ajay's place what choice would you have made? Would you have accepted 1,00,000 after five years or ₹ 75,000 today? What do you say? Apparently, ₹ 75,000 today is much more attractive than ₹ 1,00,000 after five years because present is certain than future. You could invest ₹ 75,000 in the market and earn return on this amount. ₹ 1,00,000 at the end of five years would have less purchasing power due to inflation. This clearly explains that a rupee today is worth more than a rupee tomorrow. But in reality, the financial matters are not so simple. The time value of money concepts will unravel the mystery of such choices which all of us also face in our daily lives. A good understanding of time value of money constitutes 90% of

finance sense. Therefore, recognition of time value of money is very important.

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## 2.2 CONCEPT OF TIME VALUE OF MONEY

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‘Time value of money’ is central to the concept of finance. It recognizes that the value of money is different at different points of time. Since money can be put to productive use, its value is different depending upon when it is received or paid. In simpler terms, the value of a certain amount of money today is more valuable than its value tomorrow. It is not because of the uncertainty involved with time but purely on account of timing. The difference in the value of money today and tomorrow is referred to as the time value of money.

The time value of money is one of the basic theories of financial management, it states that ‘the value of money you have now is greater than a reliable promise to receive the same amount of money at a future date’. The time value of money (TVM) is the idea that money available at the present time is worth more than the same amount in the future due to its potential earning capacity. This core principle of finance holds that, provided money can earn interest, any amount of money is worth more the sooner it is received.

Most individuals value the opportunity to receive money now higher than waiting for one or more periods to receive the same amount. Time preference for money or Time Value of Money (TVM) is an individual’s preference for possession of a given amount of money now, rather than the same amount at some future time.

### **Required Rate of Return**

The time preference for money is generally expressed by an interest rate. This rate will be positive even in reality, an investor will be exposed to some degree of risk. Therefore, he would require a rate of return, called risk premium, from the investment, which compensates him for both time and risk. Thus the required rate of return (RRR) will be calculated as:

$$\text{RRR} = \text{Risk-free rate} + \text{Risk premium} \quad (1)$$

The risk-free rate compensates for time while risk premium compensates for risk. The required rate of return is the **opportunity cost of capital** in comparable risk. It is called so because the investor ~~could~~ invest his money in assets or securities

of equivalent risk. Like individuals, firms also have required rates of return and use them in evaluating the desirability of alternative financial decisions. The interest rates account for the time value of money, irrespective of an individual's preferences and attitudes. How does knowledge of the required rate of return (or simply called the interest rate) help an individual or a firm in making investment decision? It permits the individual or the firm to convert cash flows occurring at different times to amounts of equivalent value in the present, that is, a common point of reference. Let us consider an example.

Let us assume an individual with a required interest rate of 10 per cent. If she is offered 115.50 one year from now in exchange for 100 which she should give up today, should she accept the offer? The answer in this particular case is that she should accept the offer. When her interest rate is 10 per cent, this implies that she is indifferent between any amount today and 110 per cent of that amount one year hence. She would obviously favour more than 110 per cent of the amount (i.e. more than 110 in the example) one year from now; but if the amount offered one year from now were less than 110 per cent of the immediate payment, she would retain the immediate payment. She would accept 115.50 after a year since it is more than 110 per cent of H 100, which she is required to sacrifice today.

We can ask a different question. Between what amount today and 115.50 one year from now would our investor be indifferent? The answer is that amount of which 115.50 is exactly 110 per cent. Dividing 115.50 by 110 per cent or 1.10, we get = 105

This amount is larger than what the investor has been asked to give up today. She would, therefore, accept the offer. This simple example illustrates two most common methods of adjusting cash flows for time value of money: **compounding**—the process of calculating future values of cash flows and **discounting**—the process of calculating present values of cash flows.

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### 2.3 CONCEPT OF CASH FLOW AND OTHER CONCEPTS USED IN TIME VALUE OF MONEY

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#### Concept of Cash flow:

The term 'cash flow' refers to the net amount of cash and cash equivalents being transferred in and out of a company. Cash received represents cash inflows, whole money spent represent outflow (w).

A company's ability to create value for shareholder is fundamentally determined by its ability to generate positive cash flows or to maximise long term free cash flow. Free cash flow is the cash generated by a company from its normal business operations after subtracting any money spent on capital expenditures.

Cash can be generated from sales as revenues and spend money on expenses. Organisations also receive income from interest, investment, royalties and licensing agreements and sell products on credit, expecting to actually receive the cash owed at a late date. Assessing the amounts, timings and uncertainty of cash flows, along with where they originate and where they go, is one of the most important objectives of financial reporting. It is essential for assessing a company's liquidity flexibility and overall financial performance.

The following are the various concepts and terms used in the calculation of time value of money:

- (1) **Cash-Flow:** Cash flow is either a single sum or the series of receipts or payments occurring over a specified period of time. Cash flows are of two types namely, cash inflow and cash outflow and cash flow may be of much variety namely; single cash flow, mixed cash flow streams, even cash flows or uneven cash flows.
- (2) **Cash Inflow:** Cash inflows refer to the receipts of cash, for the investment made on the asset/project, which comes into the hands of an individual or into the business organisation account at a point of time/s. Cash inflow may be a single sum or series of sums (even or uneven/mixed) over a period of time.
- (3) **Cash Outflow:** Cash outflow is just opposite to cash inflow, which is the original investment made on the project or the asset, which results in the payment/s made towards the acquisition of asset or getting the project over a period of time/s.
- (4) **Discounted Cash Flow- The Mechanics of Time Value:** The present value of a future cash flow (inflows or outflows) is the amount of current cash that is of equivalent value to the decision maker today. The process of determining present value of a future payment (or receipts) or a series of future payments (or receipts) is called discounting. The compound interest rate used for discounting cash flows is called discount rate.
- (5) **Even Cash Flows /Annuity Cash Flows:** Even cash flows, also known as annuities, are the existence of equal/even/fixed streams of cash flows may be a cash  
(vi)

inflow or outflow over a specified period of time, which exists from the beginning of the year. Annuities are also defined as ‘a series of uniform receipts or payments occurring over a number of years, which results from an initial deposit. In simple words, constant periodic sums are called annuities.

**Annuity Aspects**

**Some of the aspects related to annuities are discussed as below:**

- a. Annuitant
- b. Status
- c. Perpetuity
- d. Various types of Annuity-
  - 1. Annuity Certain
  - 2. Annuity Contingent
  - 3. Immediate or Ordinary annuity
  - 4. Annuity due
  - 5. Perpetual annuity
  - 6. Deferred annuity
- e. Annuity factor-
  - 1. Present Value Annuity factor, and
  - 2. Compound value annuity factor.

**A brief description about each of the above aspects is as follows:**

- i. Annuitant is a person or an institution, who receives the annuity.
- ii. Status refers to the period for which the annuity is payable or receivable.
- iii. Perpetuity is an infinite or indefinite period for which the amount exists.
- iv. (a) Annuity Certain refers to an annuity which is payable or receivable for a fixed number of years.  
(b) Annuity Contingent refers to the payment/receipt of an annuity till the happening of a certain event/incident.

- (c) Immediate annuities are those receipts or payments, which are made at the end of the each period.
  - (d) A series of cash flows (i.e., receipts or payments) starting at the beginning of each period for a specified number of periods is called an Annuity due. This implies that the first cash flow has occurred today.
  - (e) Perpetual annuities when, annuities payments are made for ever or for an indefinite or infinite periods.
  - (f) Deferred annuities are those receipts or payments, which starts after a certain number of years.
- v. (a) Present Value of Annuity factor is the sum of the present value of 1 for the given period of time duration at the given rate of interest;
- (b) Compound value/Future value of annuity factor is the sum of the future value of 1 for the given period of time duration at the given rate of interest. This is the reciprocal of the present value annuity discount factor.

It must be noted that when the interest rate rises, the present value of a lump sum or an annuity decline. The present value factor declines with higher interest rate, other things remaining the same.

- vi. Sinking fund is a fund which is created out of fixed payments each period (annuities) to accumulate to a future sum after a specified period. The compound value of an annuity can be used to calculate an annuity to be deposited to a sinking fund for 'n' period at 'i' rate of interest to accumulate to a given sum.
- (6) **Uneven/Mixed Streams of Cash Flows:** Uneven cash flows, as the concept itself states, is the existence of un-equal or mixed streams of cash inflows emanating from the investment made on the assets or the project.
  - (7) **Single Cash Inflows:** A single cash inflow is a single sum of receipt of cash generated from the project during the given period, for which the present value is ascertained by multiplying the cash inflow by the discount factor.
  - (8) **Multiple Cash Inflows:** Multiple cash inflows (even or mixed cash inflows) are the series of cash flows, may be annuities/mixed streams of cash inflows

which are generated from the project over the entire life of the asset.

- (9) **Future Value/Compound Value [FV/CV]:** The future value concept states as to how much is the value of current cash flow or streams of cash flows at the end of specified time periods at a given discount rate or interest rate. Future value refers to the worth of the current sum or series of cash flows invested or lent at a specified rate of return or rate of interest at the end of specified period.

In simple terms, future value refers to the value of a cash flow or series of cash flows at some specified future time at specified time preference rate for money.

- (10) **Compounding:** The process of determining the future value of present money is called compounding. In other words, compounding is a process of investing money, reinvesting the interest earned & finding value at the end of specified period is called compounding. In simple words, calculation of maturity value of an investment from the amount of investment made is called compounding.

Under compounding technique, the interest earned on the initial principal become part of principal at the end of compounding period. Since interest goes on earning interest over the life of the asset, this technique of time value of money is also known as 'compounding'.

The simple formula to calculate Compound Value in different interest time periods is-

- a) If Interest is added at the end of each year or compounded annually-

$$FV \text{ or } CV = PV (1 + i)^n$$

Where, FV or CV = Future Value or Compound Value, PV= Present Value,

$(1 + i)^n$  = Compound Value factor of 1 at a given interest rate for a certain number of years .

- (b) If Interest is added/computed semi-annually and other compounding periods/  
multi- compounding-

$$FV_n = PV \left(1 + \frac{i}{m}\right)^{n \times m}$$

Where  $FV_n$  = future value or terminal value at the end of 'n' number of years

PV = initial principal/ present value

l = Re. One

r = nominal interest rate or discount rate before adjusting for inflation

n = number of years

m = number of times compounding is made in a year.

For example;

- (i) When Compounding is made semi-annually, then  $m=2$  (because two half years in one year).
- (ii) When Compounding is made quarterly, then  $m= 4$  (because, 4 quarter years in one year).
- (iii) When Compounding is made monthly, then  $m= 12$  (because, 12 months in one year).
- (11) **Present Value:** The present value is just opposite to the future value. Present value refers to the present worth of a future sum of money or streams of cash flows at a specified interest rate or rate of return. It is also called a discounted value.  
  
In simple terms it refers to the current value of a future cash flow or series of cash flows.
- (12) **Discounting:** The inverse of the compounding process is discounting technique. The process of determining the present value of future cash flows is called discounting. Discounting or Present Value technique is more popular than compounding technique, since every individual or an organisation intends to have/hold present sums, rather than getting some amount of money after some time, because of time preference for money.



**The simple formula to find Present Value**

$$PV = \frac{FV_n}{(1+i)^n}$$

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

**Where: PV = present value**

**FV<sub>n</sub> = future value**

**I = interest rate**

**N = No of periods**

- (13) **Effective Interest Rate / Time Preference Rate:** Time preference rate is used to translate the different amounts received at different time periods; to amounts equivalent in value to the firm/individual in the present at common point reference. This time preference rate is normally expressed in 'percent' to find out the value of money at present or in future.
- (14) **Risk:** In business, the finance manager is supposed to take number of decisions under different situations. In all such decisions, there is an existence of risk and uncertainty.

Risk is the 'variability of returns' or the 'chance of financial losses' associated with the given asset. Assets that are having higher chances of loss or the higher rate of variability in returns are viewed as 'risky assets' and vice versa. Hence care should be taken to recognize and to measure the extent of risk associated with the assets, before taking the decision to invest on such risky assets.

## **A. CHECK YOUR PROGRESS**

### **Multiple Choice Questions**

**Which of the following activities is classified under operating cash flows?**

- a) Purchase of machinery
- b) Issuance of shares
- c) Sale of goods and services
- d) Payment of dividends

**2. Which financial statement reports cash inflows and outflows over a period of time?**

- a) Balance Sheet
- b) Income Statement
- c) Cash Flow Statement
- d) Statement of Retained Earnings

**3. Which of the following is an example of a financing cash flow?**

- a) Paying rent for office space
- b) Borrowing a loan from the bank
- c) Buying inventory for resale
- d) Depreciation expense

**4. Under the indirect method, which item is added back to net income to determine operating cash flow?**

- a) Depreciation expense
- b) Increase in accounts receivable
- c) Decrease in accounts payable
- d) Prepaid expenses

**5. Which of the following is NOT included in the cash flow statement?**

- a) Investing activities
- b) Financing activities
- c) Cost of goods sold
- d) Operating activities

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## **2.4 IMPORTANCE OF TIME VALUE OF MONEY**

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The consideration of time is important and its adjustment in financial decision making is also equally important and inevitable. Most financial decisions, such as the procurement of funds, purchase of assets, maintenance of liquidity and distribution of profits etc., affect the firm's cash flows/movement of cash in and out of the organization in different time periods. Cash flows occurring in different time periods are not comparable, but they should be properly measurable. Hence, it is required to adjust the cash flows for their differences in timing and risk. The value of cash flows to a common time point should be calculated.

To maximize the owner's equity, it is extremely vital to consider the timing and risk of cash flows. The choice of the risk adjusted discount rate (interest rate) is important for calculating the present value of cash flows. Time value adjustment is important for both short-term and long-term decisions. If the amounts involved are very large, time value adjustment even for a short period will have significant implications. The concept of time value of money is of immense use in all financial decisions.

**The time value concept is used:**

1. To compare the investment alternatives to judge the feasibility of proposals.
2. In choosing the best investment proposals to accept or to reject the proposal for investment.
3. In determining the interest rates, thereby solving the problems involving loans, mortgages, leases, savings and annuities.
4. To find the feasible time period to get back the original investment or to earn the expected rate of return.
5. Helps in wage and price fixation.

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## **2.5 REASONS FOR TIME VALUE OF MONEY**

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There are three primary reasons for the time value of money- reinvestment opportunities; uncertainty and risk; preference for current consumption. These reasons are explained below:

1. **Reinvestment opportunities:** The main fundamental reason for Time value of money is reinvestment opportunities. Funds which are received early can be reinvested in order to earn money on them. The basic premise here is that the money which is received today can be deposited in a bank account so as to earn some return in terms of income. In case of the firms as well, the justification for time preference for money lies simply in the availability of investment opportunities. In financial decision-making under certainty, the firm has to determine whether one alternative yields more cash or the other. In case of a firm, which is owned by a large number of individuals (shareholders), it is neither needed nor is it possible to consider the consumption preferences of (win)ers. The uncertainty about future cash

flows is also not a sufficient justification for time preference for money. We are not certain even about the usefulness of the present cash held; it may be lost or stolen. In investment and other decisions of the firm what is needed is the search for methods of improving decision-maker's knowledge about the future. In the firm's investment decision, for example, certain statistical tools such as probability theory, or decision tree could be used to handle the uncertainty associated with cash flows.

2. **Uncertainty and risk:** As an individual is not certain about future cash receipts, he or she prefers receiving cash now. Most people have subjective preference for present consumption over future consumption of goods and services either because of the urgency of their present wants or because of the risk of not being in a position to enjoy future consumption that may be caused by illness or death, or because of inflation. As money is the means by which individuals acquire most goods and services, they may prefer to have money now. Further, most individuals prefer present cash to future cash because of the available investment opportunities to which they can put present cash to earn additional cash. For example, an individual who is offered Rs. 100 now or Rs. 100 one year from now would prefer Rs. 100 now as he could earn on it an interest of, say, Rs. 5 by putting it in the savings account in a bank for one year. His total cash inflow in one year from now will be Rs. 105. Thus, if he wishes to increase his cash resources, the opportunity to earn interest would lead him to prefer Rs. 100 now, not Rs. 100 after one year.

3. **Preference for current consumption:**

The third fundamental reason for Time value of money is preference for current consumption. Everybody prefers to spend money today on necessities or luxuries rather than in future, unless he is sure that in future he will get more money to spend. For example, your father gives you two options – to get car today on your 20<sup>th</sup> birthday or to get similar car on your 21<sup>st</sup> birthday which is one year later. Which one would you choose? Obviously, you would prefer car today rather than one year later. So, every rational person has a preference for current consumption. Those who save for future, do so to get higher money and hence higher consumption in future.

In the above example of a car if your father says that he can give you a bigger car, say Honda City on your 21<sup>st</sup> birthday, then you may opt for this option if you think that it is better to wait and get a bigger car next year rather than settling for a small car this year.

Thus, we can say that the amount of money which is received early (or today) carries more value than the same amount of money which is received later (or in future). This shows the Time Value of Money.

## **B. CHECK YOUR PROGRESS**

### **Multiple Choice Questions**

#### **1. What does the time value of money concept imply?**

- a) Money has the same value over time
- b) Future money is worth more than present money
- c) Present money is worth more than future money
- d) Money has no impact over time

#### **2. Which formula is used to calculate the future value (FV) of an investment?**

- a)  $FV = PV \times (1 + r)^n$
- b)  $FV = PV / (1 + r)^n$
- c)  $FV = PV \times r \times n$
- d)  $FV = PV / r \times n$

#### **3. If the discount rate increases, what happens to the present value (PV) of future cash flows?**

- a) It increases
- b) It decreases
- c) It remains the same
- d) It fluctuates randomly

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## **2.6 TECHNIQUES OF TIME VALUE OF MONEY**

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The concept of time value of money helps in arriving at the comparable value of the different rupee amounts arising at different points of time into

equivalent values at a particular point of time (present or future). There are the following two techniques of calculating time value of money:

#### 2.6.1 Compound Value Concept (Future Value or Compounding)

#### 2.6.2 Present Value Concept (Discounting)

- 1) **Compound Value Concept:** The compound value concept is used to find out the Future Value (FV) of present money. A Future Value means that a given quantity of money today is worth more than what will be received at some point of time in future. It is the same as the concept of compound interest, wherein the interest earned in a preceding year is reinvested at the prevailing rate of interest for the remaining period. Thus, the accumulated amount (principal + interest) at the end of a period becomes the principal amount for calculating the interest for the next period.

$$\text{Future Value (FV)} = \text{Present Value (PV)} + \text{Interest (r)}$$

The compounding technique to find out the FV to present money can be explained with reference to:

- i) The FV of a single present cash flow,
- ii) The FV of a series of equal cash flows and
- iii) The FV of multiple flows.

- i) **FV of a single present cash flow:** The future value of a single cash flow is defined in term of equation as follows:

$$FV = PV (1 + r)^n$$

Where, FV = Future value

PV = Present value

r = % Rate of interest, and

n = Time gap after which FV is to be ascertained.

#### Illustration:

Mr. A makes a deposit of H 10,000 in a bank which pays 10% interest compounded annually for 5 years. You are required to find out the amount to be received by him

after 5 years.

**Solution:**

$$FV_n = PV (1 + r)^n$$

$$PV_n = \text{Rs.}10,000, r = 10\% \text{ and } n = 5 \text{ years}$$

$$FV_n = 10,000 (1 + 0.10)^5$$

$$FV_n = \text{Rs.}10,000 (1.6105)$$

$$FV_n = \text{Rs.}16,105$$

**ii) Future Value of Series of Equal Cash Flows or Annuity of Cash**

**Flows:** Quite often a decision may result in the occurrence of cash flows of the same amount every year for a number of years consecutively, instead of a single cash flow. For example, a deposit of H 1,000 each year is to be made at the end of each of the next 3 years from today.

This may be referred to as an annuity of deposit of H 1,000 for 3 years. An annuity is thus, a finite series of equal cash flows made at regular intervals.

In general terms, the future value of an annuity is given as:

$$FVA_n = A \frac{(1+r)^n - 1}{r}$$

Where,  $FVA_n$  = Future value of an annuity which has duration of n years.

A = Constant periodic flow

r = Interest rate per period

n = Duration of the annuity

It is evident from the above that future value of an annuity depends upon three variables, A, r and n. The future value will vary if any of these three variables changes. For computation purposes, tables or calculators can be made use of.

**Illustration:**

Mr. A is required to pay five equal annual payments of 10,000 each in his

deposit account that pays 10% interest per year. Find out the future value of annuity at the end of four years.

$$FVA_n = A(1+r)^n - 1/r$$

$$FVA_n = 10,000(1.10)^4 - 1/.10$$

$$FVA_n = 10,000 [4.641] = 46,410$$

iii) **Future Value of Multiple Flows:**

**Illustration:**

Suppose the investment is H 1,000 now (beginning of year 1), H 2,000 at the beginning of year 2 and H 3,000 at the beginning of year 3, how much will these flows accumulate at the end of year 3 at a rate of interest of 12 percent per annum?

**Solution:**

To determine the accumulated sum at the end of year, add the future compounded values of H 1,000, H 2, 000 and H 3, 000 respectively:

$$\begin{aligned} & FV(12,3) \text{ (Rs.1,000)} + FV(12,2) \text{ (Rs.2,000)} + FV(12,1) \text{ (Rs.3,000)} \\ &= \text{Rs.1,000} \times FVF(12,3) + 2,000 \times FVF(12,2) + 3,000 \times FVF(12,1) \\ &= \text{Rs.}[(1,000 \times 1.405) + (2,000 \times 1.254) + (3,000 \times 1.120)] = \text{Rs.7,273} \end{aligned}$$

2) **Present Value Concept:**

Present values allow us to place all the figures on a current footing so that comparisons may be made in terms of today's rupees. Present value concept is the reverse of compounding technique and is known as the discounting technique. It is a process of computing the present value of cash flow (or a series of cash flows) that is to be received in the future. Since money in hand has the capacity to earn interest, a rupee is worth more today than it would be worth tomorrow.

Discounting is one of the core principles of finance and is the primary factor  
(vi)

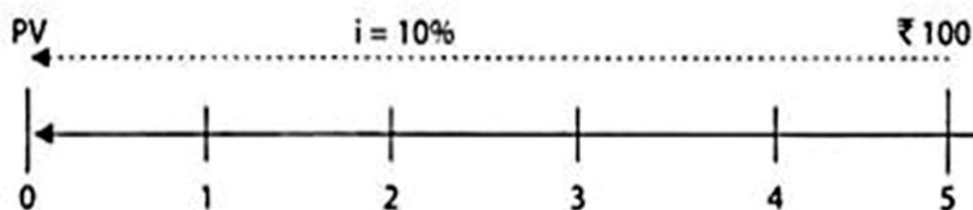


used in pricing a stream of future receipts. As a method, discounting is used. For example, H 1,000 compounded at an annual interest rate of 10% becomes H 1,771.56 in six years.

Conversely, the present value of H 1,771.56 realized after six years of investment is H 1,000 when discounted at an annual rate of 10%. This present value is computed by multiplying the future value by a discount rate. This discount rate is computed as reciprocal of compounding. Present value calculations determine what the value of a cash flow received in the future would be worth today (that is at time zero). The process of finding a present value is called discounting; the discounted value of a rupee to be received in future gets smaller as it is applied to a distant future.

The interest rate used to discount cash flows is generally called the discount rate. How much would H 100 received five years from now be worth today if the current interest rate is 10%?

Let us draw a timeline.



**Fig.2.1 : Timeline to show present value and future value.**

The arrow represents the flow of money and the numbers under the timeline represent the time period. It may be noted that time period zero is today, corresponding to which the value is called present value.

A generalized procedure for calculating the future value of a single amount compounded annually is given below as :-

**Formula:**  $FV_n = PV(1 + r)^n$

In this formula,  $(1 + r)^n$  is called the **future value interest factor (FVIF)**.

Where,  $FV_n$  = Future value of the initial flow  $n$  year hence;

$PV$  = Initial cash flow;

$r$  = Annual rate of interest;

$n$  = Number of years.

Using the above formula, the present value can be found out by discounting as shown below:

$$PV = \frac{FV_n}{(1 + r)^n} = FV_n \left( \frac{1}{(1 + r)^n} \right)$$
 In this formula,  $\left( \frac{1}{(1 + r)^n} \right)$  is called the **discounting factor** that is multiplied by the future value to find out the present value.

#### **I. Ascertaining the Present Value (PV):**

The discounting technique that facilitates the ascertainment of present value of a future cash flow may be applied in the following specific situations:

##### **(a) Present Value of a Single Future Cash Flow:**

The present value of a future sum will be worth less than the future sum because one forgoes the opportunity to invest and thus forgoes the opportunity to earn interest during that period. In order to find out the PV of future money, this opportunity cost of the money is to be deducted from the future money.

The future value of a single cash flow may be ascertained by applying the usual compound interest formula as given below:

$$PV = \frac{FV_n}{(1 + r)^n} = FV_n \times \left( \frac{1}{(1 + r)^n} \right)$$

Where  $FV_n$  = Future cash flow at the end of period;

$PV$  = Present value of a future cash flow;

$r$  = Rate of interest per annum (or period);

$n$  = Number of years (or periods).

$\left( \frac{1}{(1 + r)^n} \right)$  is present value of interest factor (PVIF) at  $r$  rate for  $n$  years.

Let us understand the computation of present value with the help of the following illustration:

**Illustration:**

Mr. Aman shall receive H 25,000 after 4 years. What is the present value of this future receipt, if the rate of interest is 12% p.a.?

**Solution:** Given that  $FV_t = 25,000$ ,  $n = 4$  and  $r = 0.12$  (or 12%), on applying the following formula for present value, we get

$$PV = FV_n \times \left( \frac{1}{(1+r)^n} \right) = 25000 \left( \frac{1}{(1+0.12)^4} \right) = 25000 \times 0.635518 = 15887.95$$

Therefore, the present value of this future receipt is ₹ 15,888 (Approx.)

On a timeline, this can be depicted as shown below:

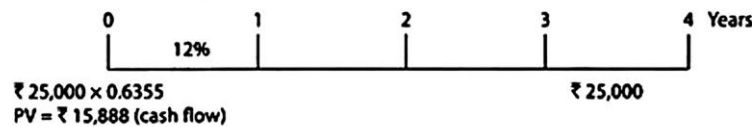


Fig. 2.2: Present value of cash flow occurring at the end of fourth year.

**(b) Present Value of Series of Equal Cash Flows (Annuity):**

An annuity is a series of equal cash flows that occur at regular intervals for a finite period of time. These are essentially a series of constant cash flows that are received at a specified frequency over the course of a fixed time period. The most common payment frequencies are yearly, semi-annually, quarterly and monthly.

There are two types of annuities – ordinary annuity and annuity due. Ordinary annuities are payments (or receipts) that are required at the end of each period. Issuers of coupon bonds, for example, usually pay interest at the end of every six months until the maturity date. Annuity due are payments (or receipts) that are required in the beginning of each period.

Payment of rent, lease etc., are examples of annuity due. Since the present and future value calculations for ordinary annuities and annuities due are

slightly different, we will first discuss the present value calculation for ordinary annuities.

The formula for calculating the present value of a single future cash flow may be extended to compute present value of series of equal cash flow as given below:

$$PV_n = \frac{A}{(1+r)^1} + \frac{A}{(1+r)^2} + \dots + \frac{A}{(1+r)^n} \quad \dots (1)$$

Where, A = Series of future cash flows for n years (or periods);

$PV_n$  = Present value of equal cash flows (or annuities) for n years;

r = Annual (or periodic) rate of interest;

n = Number of years;

Multiplying both sides of Eq. (1) by  $(1+r)$ , we get

$$PV_n(1+r) = A + \frac{A}{(1+r)^1} + \frac{A}{(1+r)^2} + \dots + \frac{A}{(1+r)^{n-1}} \quad \dots (2)$$

Subtracting Eq.(1) from Eq.(2), we get

$$PV_n \times r = A - \frac{A}{(1+r)^n} = A \left[ 1 - \frac{1}{(1+r)^n} \right]. \text{ Accordingly,}$$

$$PV_n = A \left[ \frac{1 - \frac{1}{(1+r)^n}}{r} \right] = A \times PVIFA_{(r\%,n)} \quad \therefore PVIFA_{(r\%,n)} = \left[ \frac{1 - \frac{1}{(1+r)^n}}{r} \right]$$

In above formula,  $PVIFA_{(r\%,n)}$  is called the **present value of interest factor annuity** to imply present value of a cash flow of ₹ 1 for n number of years (or periods) at r rate of interest. This factor is multiplied by the annuity value to find out the present value of annuity.

Illustration:

An LED TV can be purchased by paying H 50,000 now or H 20,000 each at the end of first, second and third year respectively. To pay cash now, the buyer would have to withdraw the money from an investment, earning interest at 10% p.a. compounded annually. Which option is better and by how much, in present value terms?

(vi)

**Solution:**

Let paying H 50,000 now be Option I and payment in three equal installments of H 20,000 each be Option II, the present value of cash outflows of Option II is computed as:

**Calculation of Present Value of Cash Outflows under Option II**

At end of Years	Cash Outflows (₹)	PVIF @ 10% p.a.	Present Value (₹)
1	20,000	0.9091	18,182
2	20,000	0.8264	16,528
3	20,000	0.7513	15,026
<b>Present Values of Cash Outflows</b>			<b>49,736</b>

Alternatively,

$$PVIFA_{(10\%,3)} = \left[ \frac{1 - \frac{1}{(1+0.1)^3}}{0.1} \right] = \frac{1 - 0.75131}{0.1} = \frac{0.24869}{0.1} = 2.4869$$

$PV_A = 2,00,000 \times 2.4869 = ₹ 49,738$  [difference of ₹ 2 is due to rounding off]  
**Option I of paying now entails a present cash outflow of ₹ 50,000**

**(c) Present Value of a Series of Unequal Cash Flows:**

The formula for computing present value of an annuity is based on the assumption that cash flows at each time period are equal. However, quite often cash flows are unequal because profits of a firm, for instance, which culminate into cash flows, are not constant year after year.

The formula for calculating the present value of a single future cash flow may be extended to compute present value of series of unequal cash flows as given below:

$$PV_n = \frac{A_1}{(1+r)^1} + \frac{A_2}{(1+r)^2} + \dots + \frac{A_n}{(1+r)^n} \quad \dots (1)$$

Where,  $A_i$  = Series of future cash flows for  $i = 1, 2, \dots, n$  years (or periods);

$PV_n$  = Present value of equal cash flows (or annuities) for  $n$  years;

$r$  = Annual (or periodic) rate of interest;

$n$  = Number of years.

### Illustration:

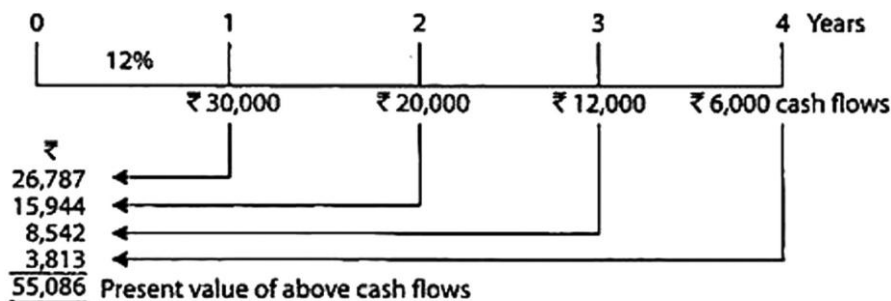
Ms. Ameeta shall receive H 30,000, H 20,000, H 12,000 and H 6,000 at the end of first, second, third and fourth year from an investment proposal. Calculate the present value of her future cash flows from this proposal, given that the rate of interest is 12% p.a.

### Solution:

#### Calculation of Present Value of Cash Flows

Years	Cash Flow (₹)	PV Factor	PV (₹)
1	30,000	0.8929	26,787
2	20,000	0.7972	15,944
3	12,000	0.7118	8,542
4	6,000	0.6355	3,813
Present Values of Cash Flows			55,086

On a timeline, it may be shown as follows:



**Fig. 2.4:** Present value of cash flow occurring at the end of four years.

### Implication:

If Ms. Ameeta lends H 55,086 @ 12% p.a., the borrower may settle the loan by

paying H 30,000, H 20,000, H 12,000 and H 6,000 at the end of first, second, third and fourth year.

**(d) Perpetuity:**

It refers to a stream of equal cash flows that occur and last forever. This implies that the annuity that occurs for an infinite period of time turns it to perpetuity. Although it may seem a bit illogical, yet an infinite series of cash flows have a finite present value.

**Examples of Perpetuity:**

- (i) Local governments set aside funds so that certain cultural activities are carried on a regular basis.
- (ii) A fund is set-up to provide scholarship to meritorious needy students on a regular basis.
- (iii) A charity club sets up a fund to provide a flow of regular payments forever to needy children.

The present value of perpetuity is computed as:

$$PV_n = \frac{A}{(1+r)^1} + \frac{A}{(1+r)^2} + \dots + \frac{A}{(1+r)^n}; \text{ Where } n \rightarrow \infty. \text{ Accordingly,}$$

$$\lim_{n \rightarrow \infty} (PV_n) = A \times \lim_{n \rightarrow \infty} \left[ \frac{1 - \frac{1}{(1+r)^n}}{r} \right] = A \times \frac{1}{r} = \frac{A}{r}; \text{ because } \frac{1}{(1+r)^n} = 0 \text{ when } n \rightarrow \infty$$

Therefore,  $PV_p = \frac{A}{r}$ , given that  $PV_p$  = Present value of perpetuity.

**A = constant cash flow (or annuity), and r = the rate of interest.**

**Illustration:**

A philanthropist wishes to institute a scholarship of H 25,000 p.a., payable to a meritorious student in an educational institution. How this amount should he invest @ 8% p.a. so that the required amount of scholarship becomes available as yield of investment in perpetuity.

**Solution:** We know that

$$PV_p = \frac{A}{r};$$

Where A = Annual cash flow = ₹ 25,000, and  
r = rate of interest = 8%; Accordingly,

$$PV_p = \frac{25,000}{0.08} = ₹ 3,12,500$$

Therefore, an amount of ₹ 3,12,500 need to be invested to provide for ₹ 25,000 per annum.

### **C. CHECK YOUR PROGRESS**

#### **Practical Questions**

#### **Problem 1: Present Value of a Single Future Amount**

You are promised ₹50,000 to be received 5 years from today. If the discount rate is 8% per annum, what is the present value of this amount?

#### **Problem 2: Present Value of Multiple Cash Flows**

You expect to receive ₹10,000 per year for the next 3 years. If the discount rate is 10%, what is the present value of these cash flows?

#### **Problem 3: Present Value of an Annuity**

A company offers to pay you ₹5,000 annually for the next 6 years. If the discount rate is 7%, what is the present value of this annuity?

## **2.7 LET US SUM UP**

Students at the end of this lesson we came to know that individual investors generally prefer possession of a given amount of cash now, rather than the same amount at some future time. This time preference for money may arise because of (a) uncertainty of cash flows, (b) subjective preference for consumption, and (c) availability of investment opportunities. The last reason is the most sensible justification for the time value of money. A risk premium may be demanded, over and above the risk-free rate as compensation for time, to account for the uncertainty of cash flows. Interest rate or time preference rate gives money its value, and facilitates the comparison of cash flows occurring at different time periods. A risk-premium rate is added to the risk-free time preference rate to derive required interest rate which is the opportunity cost of capital and is used as the discount rate



for risky investments. Two alternative procedures can be used to find the value of cash flows: compounding and discounting.

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## 2.8 KEYWORDS

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- **Annuity:** a fixed sum of money paid to someone each year, typically for the rest of their life.
- **Hire purchase:** a system by which one pays for a thing in regular instalments while having the use of it.
- **Net present value:** the difference between the present value of cash inflows and the present value of cash outflows over a period of time.
- **Nominal interest rate:** the interest rate before taking inflation into account.
- **Opportunity cost of capital:** the incremental return on investment that a business foregoes when it elects to use funds for an internal project, rather than investing cash in a marketable security.
- **Perpetuity:** a constant stream of identical cash flows with no end.
- **Sinking fund:** a fund formed by periodically setting aside money for the gradual repayment of a debt or replacement of a wasting asset.

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## 2.9 SELF ASSESSMENT QUESTIONS

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- Q1. 'Generally individuals show a time preference for money.' Give reasons for such a preference.

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- Q2. An individual's time preference for money may be expressed as a rate.' Explain.

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Q3. Why is the consideration of time important in financial decision-making?  
How can time value be adjusted? Illustrate your answer.

Q4. Explain the various concepts involved in Time value of money.

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### **2.10 LESSON END EXERCISE**

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Q1. Explain the mechanics of calculating the present value of cash flows.

Q2. What happens to the present value of an annuity when the interest rate rises?  
Illustrate.

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Q3. What is multi-period compounding? How does it affect the annual rate of interest? Give an example.

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Q4. What is an annuity due? How can you calculate the present and future values of an annuity due? Illustrate.

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## 2.11 ANSWER KEY

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### Check Your Progress A

- c) Sale of goods and services
- c) Cash Flow Statement
- b) Borrowing a loan from the bank
- a) Depreciation expense
- c) Cost of goods sold

### Check Your Progress B

c) Present money is worth more than future money

a)  $FV = PV \times (1 + r)^n$

b) It decreases

### Check Your Progress C

1. ₹34,032.44

2. ₹24,868.52

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### 2.12 SUGGESTED READINGS

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## **OVERVIEW OF FINANCIAL MANAGEMENT**

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**Lesson No. 3**

**Unit-I (Credit-1)**

**Semester-II**

**MCOMC252**

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### **RISK RETURN FRAMEWORK FOR FINANCIAL DECISION MAKING**

#### **STURCTURE**

3.0 Learning Objectives and Outcomes

3.1 Introduction

3.2 Concept of certainty, risk and uncertainty

3.3 Risk

3.3.1 Causes of Risk

3.3.2 Types of Risk

3.4 Risk-return framework for financial decision making

3.5 Measurement of Risk

3.6 Cost of Uncertainty

3.7 Let Us Sum Up

3.8 Keywords

3.9 Self-Assessment Questions

3.10 Lesson End Exercise

3.11 Answer Key

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### **3.0 LEARNING OBJECTIVES AND OUTCOMES**

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#### **Learning Objectives**

The objective of this lesson is to empower the students:

- to understand the concept of certainty, risk and uncertainty
- to apprehend the causes of risk and
- discuss the risk-return relationship.

#### **Learning Outcomes**

After completing this lesson student will be in a position to:

- to explain the difference between risk and certainty
- to discuss the various techniques used in the measurement of risk and
- to comprehend the trade-off between risk and return.

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### **3.1 INTRODUCTION**

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Dear learners, decision making is a criterion to select the best alternative of some conflicting situations arisen in the different sectors of our daily life. The importance of decision making skills can be recognized from the daily work of a manager of a manufacturing firm or a business person or an engineering professional who is generally involved in taking a series of decisions. The success or failure of an individual or an organization depends upon the ability of appropriate decision making. It depends on the different factors, like uncertainty of the future, risk factors, etc. Decision making is classified according to the scale of certainty that ranges from full certainty to full uncertainty called the degree of certainty. There are several types of decisions, such as, (i) decisions under certainty, (ii) decisions under risk, (iii) decisions under conflicting situations, (iv) decisions under uncertain conditions, etc. It is therefore necessary to understand the characteristics of good decisions and bad decisions, so that choosing an available decision

will be easy. Decision theory is defined as an analytic and systematic approach to the study of decision making. This allows us to first characterize, then decide, and finally construct good decisions. Good decisions are based on reasoning, consider all available data and possible alternative, and employ a quantitative approach. On the other hand, bad decisions are not based on reasoning, do not consider all available data and possible alternatives, and do not employ a quantitative approach. As a consequence of the uncertainty in prevailing conditions, it should be kept in mind that a good decision may sometimes result in an unexpected outcome, but it is still considered to be a good decision if it is made properly. On the other hand, at the same time, a bad decision may occasionally lead to a good outcome (incidentally), but still it is a bad decision. Whether a particular decision is good or bad is not apparent from one occasion. A good decision will benefit in the long run, while a bad decision will lead to a loss in the long run. The systematic approach to good decision making may be summarized in the form of the five steps in decision making as follows:

1. List all the possible alternatives (that is, actions or decisions).
2. Identify the possible outcomes as consequences of every possible action or decision.
3. Identify the profit, payoff, or reward for every possible action, corresponding to each potential outcome.
4. Select one of the decision theory models.
5. Apply the selected model and make our decision accordingly.

It is also necessary to recognize the decision making environments. Is the decision to be made under certainty or uncertainty? It is easier to make decisions under certainty, while it is harder to make decisions under uncertainty. Moreover, the uncertainty can be non-deterministic, where no pattern can be found in the states of nature or probabilistic where states of nature exhibit a certain pattern. As a result of existence of a pattern in states of nature, it is possible to measure the risk posed by the uncertainty in the

decision making environment. The situation is then described as in the context of decision making under risk. In the framework of decision making, under assurance the consequences of every decision or action are known, and it is then left to the decision maker to choose the alternative that results in the best possible outcome. By contrast, when decision is to be made under uncertainty, the consequences of the action or decision are not known with certainty. It is then necessary to determine the level of risk one is willing to take in decision making.

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### **3.2 CONCEPT OF CERTAINTY, RISK AND UNCERTAINTY**

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If a finance manager feels he knows exactly what the outcomes of a project would be and is willing to act as if no alternative were in existence, he will be presumably acting under conditions of certainty. Thus, certainty is a state of nature which arises when outcomes are known and determinate. Riskiness of an investment project is defined as the variability of its cash flows from those that are expected. The greater the variability, the riskier the project is said to be. In risky situations, the probabilities of an event occurring are known and these probabilities are objectively determinable. The main attribute of risk situation is that the event is repetitive in nature and possesses a frequency distribution. This frequency distribution is used to draw inferences on the basis of objective statistical technique. Thus, risk refers to a set of unique outcomes for a given event which can be assigned probabilities. In contrast, when an event is not repetitive and unique in character and the finance manager is not sure about probabilities themselves, uncertainty is said to prevail. Uncertainty is a subjective phenomenon. In such situation, no observations can be drawn from frequency distributions. Capital expenditure projects are often unique. The finance manager may not have store of historical data to draw upon to see as to how the same project had fared in the past. The outcomes in the state of uncertainty are too unsure to be assigned probabilities. It is worth noting that distinction between risk and uncertainty is of academic interest only. Practically, no generally accepted methods exist.



### ***Decision making under certainty***

A condition of certainty exists when the decision-maker knows with reasonable certainty what the alternatives are, what conditions are associated with each alternative, and the outcome of each alternative. Under conditions of certainty, accurate, measurable, and reliable information on which to base decisions is available. The cause and effect relationships are known and the future is highly predictable under conditions of certainty. Such conditions exist in case of routine and repetitive decisions concerning the day-to-day operations of the business.

### ***Decision-making under Risk:***

When a manager lacks perfect information or whenever an information asymmetry exists, risk arises. Under a state of risk, the decision maker has incomplete information about available alternatives but has a good idea of the probability of outcomes for each alternative. While making decisions under a state of risk, managers must determine the probability associated with each alternative on the basis of the available information and his experience.

### ***Decision-making under Uncertainty:***

Most significant decisions made in today's complex environment are formulated under a state of uncertainty. Conditions of uncertainty exist when the future environment is unpredictable and everything is in a state of flux. The decision-maker is not aware of all available alternatives, the risks associated with each, and the consequences of each alternative or their probabilities. The manager does not possess complete information about the alternatives and whatever information is available, may not be completely reliable. In the face of such uncertainty, managers need to make certain assumptions about the situation in order to provide a reasonable framework for decision-making. They have to depend upon their judgment and experience for making decisions.

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### **3.3 RISK**

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Risk is defined in financial terms as the chance that an outcome or investment's actual gains will differ from an expected outcome or return. Risk includes the possibility of losing some or all of an original investment. Quantifiably, risk is usually assessed by considering historical behaviors and outcomes. In finance, standard deviation is a common metric associated with risk. Standard deviation provides a measure of the volatility of asset prices in comparison to their historical averages in a given time frame. Overall, it is possible and prudent to manage investing risks by understanding the basics of risk and how it is measured.

Learning the risks that can apply to different scenarios and some of the ways to manage them holistically will help all types of investors and business managers to avoid unnecessary and costly losses. Everyone is exposed to some type of risk every day – whether it's from driving, walking down the street, investing, capital planning, or something else. An investor's personality, lifestyle, and age are some of the top factors to consider for individual investment management and risk purposes. Each investor has a unique risk profile that determines their willingness and ability to withstand risk. In general, as investment risks rise, investors expect higher returns to compensate for taking those risks.

A fundamental idea in finance is the relationship between risk and return. The greater the amount of risk an investor is willing to take, the greater the potential return. Risks can come in various ways and investors need to be compensated for taking on additional risk. For example, a U.S. Treasury bond is considered one of the safest investments and when compared to a corporate bond, it provides a lower rate of return. A corporation is much more likely to go bankrupt than the U.S. government. Because the default risk of investing in a corporate bond is higher, investors are offered a higher rate of return. Individuals, financial advisors, and companies can all develop risk

management strategies to help manage risks associated with their investments and business activities. Academically, there are several theories, metrics, and strategies that have been identified to measure, analyze, and manage risks. Some of these include: standard deviation, beta, Value at Risk (VaR), and the Capital Asset Pricing Model (CAPM). Measuring and quantifying risk often allows investors, traders, and business managers to hedge some risks away by using various strategies including diversification and derivative positions.

### **3.3.1 Causes of Risk**

#### ***1. Credit Risk***

Financial markets must constantly guard against credit risk, according to the International Financial Risk Institute. This type of market risk is caused by debtors who cannot meet obligations to pay back loans or make payments on credit accounts, and therefore default or are forced to declare bankruptcy. When a debtor declares bankruptcy, the lender may be able to recover only a portion of the original loan amount. Financial markets attempt to combat credit risk by maintaining stringent requirements for extending credit, such as examining each applicant's credit report for evidence of past financial irresponsibility and maintaining credit score requirements.

#### ***2. Problems of Liquidity***

Financial markets also face the problem of liquidity, or difficulty in being able to turn assets into cash. This form of financial risk is caused by one or more financial market participants not having enough cash to meet all financial obligations by the due dates of the accounts. The fear with this type of risk is that failure of one financial market participant, such as a corporation, to meet its financial obligations may expose larger financial problems in the market.

#### ***3. Settlement Risks***

A settlement risk is the chance a creditor takes of a debtor filing for bankruptcy or settling his credit account for less than the full amount owed. This type of financial risk can be caused by a number of factors, from a debtor's own financial circumstances to the terms of a credit account or loan he agreed to repay. A creditor has the right to appeal to the court to not allow a debtor to enter into bankruptcy protection. A creditor may also attempt to secure a judgment against a debtor in an attempt to force the debtor to repay his account.

***Other causes of risk:***

1. Wrong decision or wrong timing.
2. Term of investment-long term investment is more risky than short investment as future is uncertain.
3. Level of investment-Higher the quantum of investment, the higher the risk.
4. Nature of industry- Risk is higher in speculative and cyclical industries while less in defensive and growth industries.
5. Political and legal factors- Risk may arise due to changes in government policy and legislative regulations in a country

**A. CHECK YOUR PROGRESS**

State true or false in the following statements.

1. There is always certainty in financial markets because they follow predictable patterns.
2. Diversification can help reduce risk but cannot provide complete certainty in investment returns.
3. Inflation and interest rates introduce uncertainty in long-term financial planning.
4. Holding cash guarantees certainty in maintaining its value over time.

**3.3.2 Types of Risk**

Risk is divided into two parts i.e. Systematic risk and unsystematic risk.

These risk are discussed in detail as under:



**A) *Systematic Risk:***

Systematic risk is due to the influence of external factors on an organization. Such factors are normally uncontrollable from an organization's point of view. It is a macro in nature as it affects a large number of organizations operating under a similar stream or same domain. It cannot be planned by the organization. The types of systematic risk are listed below.

1. Interest rate risk
2. Market risk
3. Purchasing power or inflationary risk.

Each risk classified under this group is discussed in detail below:-

**1. *Interest rate risk***

Interest-rate risk arises due to variability in the interest rates from time to time. It particularly affects debt securities as they carry the fixed rate of interest. The types of interest-rate risk are price risk and re-investment rate risk.

- a) Price risk arises due to the possibility that the price of the shares, commodity, investment, etc. may decline or fall in the future.
- b) Reinvestment rate risk results from fact that the interest or dividend earned from an investment can't be reinvested with the same rate of return as it was acquiring earlier.

## 2. *Market risk*

Market risk is associated with consistent fluctuations seen in the trading price of any particular shares or securities. That is, it arises due to rise or fall in the trading price of listed shares or securities in the stock market. The types of market risk are listed below.

- a. Absolute risk,
- b. Relative risk,
- c. Directional risk
- d. Non-directional risk,
- e. Basis risk and
- f. Volatility risk.

The different types of market risk is explained below :-

- a) **Absolute risk** is without any content. For e.g., if a coin is tossed, there is fifty percentage chance of getting a head and vice-versa.
- b) **Relative risk** is the assessment or evaluation of risk at different levels of business functions. For example, a relative-risk from a foreign exchange fluctuation may be higher if the maximum sales accounted by an organization are of export sales.
- c) **Directional risks** are those risks where the loss arises from an exposure to the particular assets of a market. For example an investor holding some shares experience a loss when the market price of those shares falls down.
- d) **Non-Directional risk** arises where the method of trading is not consistently followed by the trader. For example the dealer will buy and sell the share simultaneously to mitigate the risk
- e) **Basis risk** is due to the possibility of loss arising from imperfectly matched risks. For example, the risks which are in offsetting positions in two related but non-identical markets.

- f) Volatility risk** is of a change in the price of securities as a result of changes in the volatility of a risk-factor. For example, it applies to the portfolios of derivative instruments, where the volatility of its underlying is a major influence of prices.

**3. *Purchasing power or inflationary risk***

Purchasing power risk is also known as inflation risk. It emanates (originates) from the fact that it affects a purchasing power adversely. It is not desirable to invest in securities during an inflationary period. The types of power or inflationary risk are listed below :-

- a) **Demand inflation risk** arises due to increase in price, which result from an excess of demand over supply. It occurs when supply fails to cope with the demand and hence cannot expand anymore. In other words, demand inflation occurs when production factors are under maximum utilization.
- b) **Cost inflation risk** arises due to sustained increase in the prices of goods and services. It is actually caused by higher production cost. A high cost of production inflates the final price of finished goods consumed by people.

### ***B) Unsystematic Risk***

Unsystematic risk is due to the influence of internal factors prevailing within an organization. Such factors are normally controllable from an organization's point of view. It is a micro in nature as it affects only a particular organization. It can be planned, so that necessary actions can be taken by the organization to mitigate (reduce the effect of) the risk. The types of unsystematic risk are listed below.

1. Business or liquidity risk,
2. Financial or credit risk and
3. Operational risk.

Each risk classified under this group is explained below :-

#### ***1 Business or liquidity risk***

Business risk is also known as liquidity risk. It emanates (originates) from the sale and purchase of securities affected by business cycles, technological changes, etc. The types of business or liquidity risk are :-

- a) **Asset liquidity risk** is due to losses arising from an inability to sell or pledge assets at, or near, their carrying value when needed. For example, assets sold at a lesser value than their book value.



- b) **Funding liquidity risk** exists for not having an access to the sufficient-funds to make a payment on time. For example when commitments made to customers are not fulfilled.

## 2 *Financial or credit risk*

Financial risk is also known as credit risk. It arises due to change in the capital structure of the organization. The capital structure mainly comprises of three ways by which funds are sourced for the projects. These are as follows:

Owned funds. For example, share capital.

Borrowed funds. For example, loan funds.

Retained earnings. For example, reserve and surplus.

The types of financial or credit risk are depicted and listed below.

- a. Exchange rate risk,
- b. Recovery rate risk
- c. Sovereign risk and
- d. Settlement risk.

The meaning of types of financial or credit risk is as follows:

- a. **Exchange rate risk** is also called as exposure rate risk. It is a form of financial risk that arises from a potential change seen in the exchange rate of one country's currency in relation to another country's currency and vice-versa. For example, investors or businesses face it either when they have assets or operations across national borders, or if they have loans or borrowings in a foreign currency.
- b. **Recovery rate risk** is an often neglected aspect of a credit-risk analysis. The recovery rate is normally needed to be evaluated. For example, the expected recovery rate of the funds tendered (given) as a loan to

the customers by banks, non-banking financial companies (NBFC), etc.

- c. **Sovereign risk** is associated with the government. Here, a government is unable to meet its loan obligations, reneging (to break a promise) on loans it guarantees, etc.
- d. **Settlement risk** exists when counterparty does not deliver a security or its value in cash as per the agreement of trade or business.

### 3 *Operational risk*

Operational risks are the business process risks failing due to human errors. This risk will change from industry to industry. It occurs due to breakdowns in the internal procedures, people, policies and systems. The types of operational risk are listed below.

- a. Model risk,
- b. People risk,
- c. Legal risk and
- d. Political risk.

The meaning of types of operational risk is as follows:

- a. **Model risk** is involved in using various models to value financial securities. It is due to probability of loss resulting from the weaknesses in the financial-model used in assessing and managing a risk.
- b. **People risk** arises when people do not follow the organization's procedures, practices and/or rules. That is, they deviate from their expected behavior.
- c. **Legal risk** arises when parties are not lawfully competent to enter an agreement among themselves. Furthermore, this relates to the regulatory-risk, where a transaction could conflict with a government

policy or particular legislation (law) might be amended in the future with retrospective effect.

- d. Political risk** occurs due to changes in government policies. Such changes may have an unfavorable impact on an investor. It is especially prevalent in the third-world countries.

## **B. Check Your Progress**

### **Multiple Choice Questions**

**1. Which of the following is an example of systematic risk?**

- a) A company's CEO resigning
- b) A global financial crisis
- c) A factory fire affecting production
- d) A competitor launching a similar product

**2. Credit risk refers to:**

- a) The risk of losing money due to inflation
- b) The risk that a borrower may default on a loan
- c) The risk of changes in interest rates affecting investments
- d) The risk of stock prices declining

**3. Which type of risk is specific to a company or industry and can be reduced through diversification?**

- a) Systematic risk
- b) Market risk
- c) Unsystematic risk
- d) Interest rate risk

**4. Liquidity risk refers to:**

- a) The risk that an asset cannot be sold quickly without losing value
- b) The risk of an economy-wide recession
- c) The risk that inflation will reduce purchasing power
- d) The risk that an investment will not generate expected returns

**5. Which of the following risks cannot be eliminated through diversification?**

- a) Business risk
- b) Systematic risk
- c) Operational risk
- d) Credit risk

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### **3.4 RISK-RETURN FRAMEWORK FOR FINANCIAL DECISION MAKING**

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The concept of risk and return analysis is integral to the process of investing and finance. All financial decisions involve some risk. One may expect to get a return of 15% per annum in his investment but the risk of “not able to achieve 15% return” will always be there. Return is simply a reward for investing as all investing involves some risk. The greater the risk, the greater the return expected. The objective of risk and return analysis is to maximize the return by creating a balance of risk. For example, in case of working capital management, the less inventory we keep, the higher the expected return as less of our money is locked as asset.; but we also have an increased risk of running out of raw material when we actually need it for production or maintenance which means we loose sale. Thus, all companies tries very hard to maintain minimum inventory as possible without effecting smooth production. This is a very common example of risk return trade-off. In fact, risk and return are two key determinants of share prices. Greater the risk assumed higher will be the return. Investment which carry low risk such as government securities will offer a low rate of return. Any rational investor would analyse the risk associated with the particular stock and a thorough knowledge of risk

helps him to plan his portfolio so as to minimize the risk associated with the investment. Return on investment may be because of income, capital appreciation or a positive hedge against inflation. The degree of risk depends upon the features of asset, investment instruments, mode of investment etc. the wider the range of possible outcomes, the greater the risk. The degree of risk in a particular situation is not absolute. It depends on the level of information available with the entity facing the risk. When the complete information is available, the perception of the entity differs. Two different entities may interpret the same information differently or different expectations for the future which would lead to two different sets of probability distribution. Hence, the same set of circumstances may translate in to different levels of risk for different people. The concept of security analysis is based on risk and return. To earn return on investment, investment has to be made for some period which in turn implies passage of time. Dealing with the return to be achieved requires estimate of the return on investment over the time period.

The Risk- Return relationship is characterized as being a “positive” or “direct” relationship meaning that if there are expectations of higher levels of risk associated with a particular investment then greater returns are required as compensation for that higher expected risk. Alternatively, if an investment has relatively lower levels of expected risk then investors are satisfied with relatively lower returns. This risk-return relationship holds for individual investors and business managers. Greater degrees of risk must be compensated for with greater returns on investment. Since investment returns reflects the degree of risk involved with the investment, investors need to be able to determine how much of a return is appropriate for a given level of risk. This process is referred to as “pricing the risk”. In order to price the risk, we must first be able to measure the risk (or quantify the risk) and then we must be able to decide an appropriate price for the risk we are being asked to bear.

It is now clear that even with the most conservative investments we face some element of risk. However, not investing your money is also risky. For example, putting our money under the mattress invites the risk of theft and the loss in purchasing power if prices of goods and services rise in the economy. When we recognize the different levels of risk for each type of investment asset, we can better manage the total risk in our investment portfolio. A direct correlation exists between risk and return and is illustrated below in Figure 3.1. The greater the risk, the greater is the potential return. However, investing in securities with the greatest return and, therefore, the greatest risk can lead to financial ruin if everything does not go according to plan.

Understanding the risks pertaining to the different investments is of little consequence unless we are aware of our attitude toward risk. How much risk we can tolerate depends on many factors, such as the type of person we are, our investment objectives the amount of our total assets, the size of our portfolio, and the time horizon for our investments. How nervous are we about our investments? Will we check the prices of our stocks daily? If so, we do not tolerate risk well, and our portfolio should be geared toward conservative investments that generate income through capital preservation. The percentage of our portfolio allocated to stocks may be low to zero depending on our comfort zone. If we are not bothered when our stocks decline in price because with a long holding period we can wait out the decline, our portfolio of investments can be designed with a higher percentage of stocks.

### ***Risk-Return Trade-Off***

The risk/return tradeoff could easily be called the “ability-to-sleep-at-night test.” While some people can handle the equivalent of financial skydiving without batting an eye, others are terrified to climb the financial ladder without a secure harness. Deciding what amount of risk you can take while remaining comfortable with your investments is very important. In

the investing world, the dictionary definition of risk is the chance that an investment's actual return will be different than expected. Technically, this is measured in statistics by standard deviation. Risk means you have the possibility of losing some, or even all, of our original investment. Low levels of uncertainty (low risk) are associated with low potential returns. High levels of uncertainty (high risk) are associated with high potential returns. The risk/ return tradeoff is the balance between the desire for the lowest possible risk and the highest possible return. This is demonstrated graphically in the chart below. A higher standard deviation means a higher risk and higher possible return.



*Figure 3.1 Risk- return trade off*

A common misconception is that higher risk equals greater return. The risk/return tradeoff tells us that the higher risk gives us the possibility of higher returns. There are no guarantees. Just as risk means higher potential returns, it also means higher potential losses. On the lower end of the scale, the risk-free rate of return is represented by the return on U.S. Government Securities because their chance of default is next to nothing. If the risk-free rate is currently 6%, this means, with virtually

no risk, we can earn 6% per year on our money. The common question arises: who wants to earn 6% when index funds average 12% per year over the long run? The answer to this is that even the entire market (represented by the index fund) carries risk. The return on index funds is not 12% every year, but rather -5% one year, 25% the next year, and so on. An investor still faces substantially greater risk and volatility to get an overall return that is higher than a predictable government security. We call this additional return the risk premium, which in this case is 6% (12% - 6%). Determining what risk level is most appropriate for us isn't an easy question to answer. Risk tolerance differs from person to person. Your decision will depend on your goals, income and personal situation, among other factors. Further, the concept that every rational investor, at a given level of risk, will accept only the largest expected return. That is, given two investments at the exact same level of risk, all other things being equal, every rational investor will invest in the one that offers the higher return. The risk-return tradeoff is pervasive throughout economics and finance. It is the reason that riskier bonds pay higher coupons than other bonds. It is also the reason that bonds pay lower returns than most stocks because they are a less risky investment.

To conclude, we can say that risk is an inherent part of investing. In order to get a reasonable return on an investment, risk has to be present. A riskless asset will produce little or no return. The intelligent investor manages risk by recognizing its existence, measuring its degree in any given investment and realistically assessing his or her capacity to take risk. There is nothing wrong with investing in a high risk fund if the fund's return is equally high.

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### **3.5 MEASUREMENT OF RISK**

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A number of techniques have been suggested by economists to deal with risk in investment appraisal. Some of the popular techniques used for this purpose are as follows:



**1. Risk Adjusted Discount Rate Method:** This method calls for adjusting the discount rate to reflect the degree of the risk of the project. The risk adjusted discount rate is based on the presumption that investors expect a higher rate of return on risky projects as compared to less risky projects. The rate requires determination of (i) risk free rates and (ii) risk premium rate. Risk free rate is the rate at which the future cash inflows should be discounted. Risk premium rate is the extra return expected by the investor over the normal rate. The adjusted discount rate is a composite discount rate. It takes into account both time and risk factors.

*Example:*

A project with an outlay of H 4,00,000, its risk adjusted discount rate is estimated at 18 per cent. The data on cash flow is as follows:

<i>Year</i>	<i>Expected Cash flow (Rs.)</i>
1	80,000
2	1,20,000
3	1,60,000
4	1,20,000
5	80,000

Should the project be accepted or rejected?

Accept the project: if  $NPV > 1$

Reject the project: if  $NPV < 1$

Using the risk adjusted discount rate we find that

$$NPV = \frac{80,000}{1.18} + \frac{1,20,000}{(1.18)^2} + \frac{1,60,000}{(1.18)^3} + \frac{1,20,000}{(1.18)^4} + \frac{80,000}{(1.18)^5} = \text{Rs } 4,00,000$$

2. **The Certainty Equivalent Approach:** According to this method, the estimated cash flows are reduced to a conservative level by applying a correction factor termed as certainty equivalent coefficient. The correction factor is the ratio of riskless cash flow to risky cash flow. Under the certainty equivalent method the net present value is calculated as:

$$NPV = \sum_{t=1}^n \frac{\alpha_t A_t}{(1+i)^t} - I$$

Where

$\alpha_t$  = Certainty Equivalent

Coefficient  $A_t$  = Expected Cash

Flow for year  $t$   $I$  = Initial outlay on the project

$i$  = Discount rate

*Example:*

Pioneer Concern is considering a project with initial outlay of H 18,00,000 with a risk free discount rate of 1.05 per cent. The expected cash flow and certainty equivalent coefficient are given below. What is NPV of the project?

<i>Year</i>	<i>Expected Cash flow (Rs)</i>	<i>Certainty Equivalent Coefficient</i>
1	4,00,000	0.90
2	6,00,000	0.85
3	8,00,000	0.82
4	10,00,000	0.78

$$NPV = \frac{(4,00,000)(0.90)}{1.05} + \frac{(6,00,000)(0.85)}{(1.05)^2} + \frac{(8,00,000)(0.82)}{(1.05)^3} + \frac{(10,00,000)(0.78)}{(1.05)^4} - 18,00,000$$

**3. Sensitivity Analysis:** The future is not certain and involves uncertainties and risk, the cost and benefits projected over the lifetime of the project may turn out to be different. This deviation has an important bearing on the selection of a project. If the project can stand the test of changes in the future, affecting costs and benefits, the project would qualify for selection. The technique to find out this strength of the project is covered under the sensitivity analysis of the project. This analysis tries to avoid over estimation or underestimation of the cost and benefits of the project. In sensitivity analysis, we try to find out the critical elements which have a vital bearing on the costs or benefits of the project. In investment decision, one has to consider as many elements of uncertainty as possible on costs or benefits side and then arrive at critical elements which effect the expected costs or benefits of the project. How many variables should be tested to carry out the sensitivity analysis in order to find out its impact on costs or benefits of the projects is a matter of judgement. In sensitivity analysis, one has to consider the changes in the various factors correlated with changes in the other. In order to arrive at the degree of uncertainty, the decision maker has to make alternative calculation of costs or benefits of the project.

Sensitivity analysis is a simulation technique in which key variables are changes and the resulting change in the rate of return is observed. Some of the key variables are cost, prices, project life, market share, etc. Usually this analysis provides information about cash flows under the assumptions:

- (i) Pessimistic,
- (ii) Most likely, and
- (iii) Optimistic.

It explains how sensitive the cash flows are under these three different situations. If the difference is larger between the optimistic and pessimistic cash flows, the more risky is the project.

*Example:*

Pioneer Company Ltd. is attempting to evaluate two projects A and B. Each project requires a net investment of H 10,000 and the annual cash flows from each of the project is estimated at H 2,000 p.a. in the next 15 years. The company's cost of capital may be taken at 10%. In order to arrive at a decision about the selection of the project, the following data have been ascertained regarding the NPV of cash flows of each project.

	<i>Project A</i>	<i>Project B</i>	<i>Discount factor at 10%</i>	
Initial Investment	Rs. 10,000	Rs. 10,000	<i>Project A</i>	<i>Project B</i>
Estimated cash flows for each of 15 years.				
Pessimistic	Rs. 1,500	Rs.—	7.606	7.606
Most likely	Rs. 2,000	Rs. 2,000	7.606	7.606
Optimistic	Rs. 2,500	Rs. 4,000	7.606	7.606
	<i>PRESENT VALUE</i>		<i>NPV</i>	
	<i>Project A</i>	<i>Project B</i>	<i>Project A</i>	<i>Project B</i>
Pessimistic	Rs. 11,409	Rs.—	Rs. 1,409	Rs. 10,000
Most likely	Rs. 15,212	Rs. 15,212	Rs. 5,212	Rs. 5,212
Optimistic	Rs. 19,015	Rs. 30,424	Rs. 9,015	Rs. 20,424

The above analysis shows that project B is more risky.

- Probability Theory Approach:** Another method for dealing with risks is to estimate the value for a result. Each value of prospective result is assigned a probability. Here one has to see a range of possible cash flows from the most optimistic to the most pessimistic for each pertinent year. Probability means the likelihood of happening an event. It may be objective or subjective. An objective probability is based on a large number of observations under independent and identical conditions repeated over a period of time. A subjective probability is based on personal judgement. In capital budgeting decisions the probabilities are of a subjective type since they are based on a single event.

*Process of assigning probabilities:*

*It is subject to certain rules and they are:*

- (i) List of events collectively expansive
- (ii) Events must be mutually exclusive
- (iii) The numerical probabilities must add up to 1.

***Basic Probability Theorem:***

We must see certain basic theorems relating to a probability theory.

These are as follows:

- (i) The probability of an event is always a number between 0 and 1 inclusive. If an event is sure to occur, its probability is by definition equal to 1. If it is certain that it will not occur its probability is 0.
- (ii) If 'n' events are equally likely and only one of them may happen, then the probability of that event is  $1/n$ .
- (iii) If two events are mutually independent and the probabilities of one is  $P_1$  while that of other  $P_2$ , the probability of the events occurring together is the product of  $P_1, P_2$ .
- (iv) If the events are mutually exclusive and the probability of the one is  $P_1$  while that of the other is  $P_2$ , the probability of either one or the other occurring is the sum  $P_1+P_2$ .

*Example:*

Pioneer Company Ltd. has given the following possible cash inflows for two of their projects A and B. Both the projects will require an equal investment of H 5,000. Let us compute expected monetary values for the projects A and B.

<i>Possible event</i>	<i>Project A</i>			<i>Project B</i>		
	<i>Cash in flow</i>	<i>Probability</i>	<i>Expected value</i>	<i>Cash in flow</i>	<i>Probability</i>	<i>Expected value</i>
A	Rs. 4,000	.10	Rs. 400	Rs. 12,000	.10	Rs. 1,200
B	Rs. 5,000	.20	Rs. 1000	Rs. 10,000	.15	Rs. 1,500
C	Rs. 6,000	.40	Rs. 2400	Rs. 8,000	.50	Rs. 4,000
D	Rs. 7,000	.20	Rs. 1400	Rs. 6,000	.15	Rs. 900
E	Rs. 8,000	.10	Rs. 800	Rs. 4,000	.10	Rs. 400
Total			Rs. 6,000			Rs. 8,000

The above table shows that Project B has higher monetary value as compared to Project A. Therefore, Project B is preferable.

**5. Standard Deviation:** Subjective judgment of the decision makers plays a crucial role in practice to resolve the problem which may turn out to be imprecise or biased. There is no precise way to find the probabilities of different outcomes. This limitation is overcome by adoption of standard deviation approach. The standard deviation is defined as the square root of the mean of the squared deviations of all the items from the mean and it is usual to denote it by the small Greek “Sigma”. In the case of capital budgeting, this measure is used to compare the variability of possible cash flows of different projects from their respective mean or expected values.

The following Steps are to be followed for calculating the S.D. of the possible cash flows:

- (i) Compute the mean value of the possible cash flows.
- (ii) Find out the deviation between the mean value and the possible cash flows.
- (iii) Square the deviations.
- (iv) Multiply the squared deviations by the assigned probabilities to get the weighted squared deviations.
- (v) The sum of the weighted squared deviations and their square root are calculated.  
The result gives the S.D.

*Illustration:*

On the basis of the data given in probability theory approach find out which project is more risky by adopting S.D. approach.

**Project A**

Possible events	Cash inflows	Deviation from Mean(Rs. 6000)	Deviations squared	Probability	Probability Deviation squared
A	4,000	-2,000	40,00,000	.10	4,00,000
B	5,000	-1,000	10,00,000	.20	2,00,000
C	6,000	0	0	.40	0
D	7,000	1,000	10,00,000	.20	2,00,000
E	8,000	2,000	40,00,000	.10	4,00,000
				$\Sigma P_{def}^2$	= 12,00,000

$$\sigma = \sqrt{P_{def}^2} = \sqrt{12,00,000} = 1,095$$

**Project B**

Possible events	Cash inflows	Deviation from Mean (Rs. 8,000)	Deviations squared	Probability	Probability Deviation squared
A	12,000	4,000	1,60,00,000	.10	16,00,000
B	10,000	2,000	40,00,000	.15	6,00,000
C	8,000	0	0	.50	0
D	6,000	-2,000	40,00,000	.15	6,00,000
E	4,000	-4,000	1,60,00,000	.10	16,00,000

$$\sigma = \sqrt{EP_{def}^2} = \sqrt{44,00,000} = 2,098$$

A project having a larger standard deviation will be more risky as compared to a project having smaller standard deviation. In the above illustration, the standard deviation for project A is 1,095 while that of project B is 2,098. Hence, project B is more risky.

- 6. Coefficient of Variation:** Standard deviation is expressed in the units of the original distribution and is called absolute measure of dispersion. Therefore, absolute measure must be reduced to a form which is free from the original unit of measurement. This can be done by expressing it in relation to the average from which variation is measured. This measure of relative variation is obtained by dividing the absolute measure by that average and is called a coefficient of variation. The co-efficient of variation can be calculated as follows:

Coefficient of Variation = Standard Deviation/Expected (or Mean) Cash Flow

On the basis of the data given in the standard deviation approach, the standard deviation for project A is 1095, while that for project B is 2098. The coefficient of variation of project B is more as compared to project A. Hence project B is more risky.

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### **3.6 COST OF UNCERTAINTY**

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Economists often make the distinction between risk and uncertainty. Risk is normally defined as the likelihood of a negative outcome upon which a probability can be assigned. Uncertainty on the other hand exists when outcomes are out there to which no probability can be reasonably assigned. Since no one is certain how pervasive and deep the default rate will be on the so-called subprime mortgages that kept the housing boom going long after the actual demand was satisfied in many areas, the securities which contain these risky mortgages cannot be priced. When a security cannot be priced, it cannot be bought or sold and it certainly cannot be used for collateral to access more capital. What we see happening in the markets is the effect of this uncertainty. As people who own these securities want their money freed up to avoid further losses, in many cases no price is available to sell them and therefore there are few buyers. These instruments were sold under the expectation that the default rate was relatively known and the return and cost were built into the price (that was risk). Those risks were often hedged with other instruments which generally would have transferred the risk of a normal default pattern to those who were willing to accept a heightened prospect of returns for the assumption of the risk.

As paralysis sets in due to an inability to sell, hedge funds, some banks which offer hedge fund investments and many mortgage companies that are supposed to stand behind the instruments are unable to perform. To the extent that these instruments were pledged as collateral for other loans, banks have been calling those loans or demanding injections of other equity like cash to bring the collateral value up to where it should be with respect to the amount of the loan outstanding. Since firms have invested the loan money, often in stocks and other instruments, they go



into wave after wave of selling or unwinding those investments to pay up collateral values or allow troubled securities to be sold. When we hear that the FED is injecting liquidity from time to time, it means the government is stepping in to purchase some of these securities that otherwise would be frozen in uncertainty. The panic spreads when the common investor sells their equity holdings trying to avoid loss of value. As stock prices fall to prices well below their actual value, others step in to purchase these bargain stocks. This creates a price increase for the stock. But many investment advisors are telling clients to do what the hedge funds are doing, namely “selling into” any strength in the market to get as much cash as possible. This selling into strength causes stocks to plunge just about every afternoon when morning optimism/ bargain hunting has put a gain back into the market. So the cycle of fear and panic continues and will continue until uncertainty becomes risk and these assets can be priced again.

## C. CHECK YOUR PROGRESS

### Case study

Raj, a 35-year-old investor, has recently received a bonus of ₹10 lakh. He wants to invest this amount to maximize returns but is also concerned about minimizing risk. He considers three investment options:

1. **Fixed Deposit (FD)** – Offers a **low-risk, guaranteed** return of 6% per annum.
2. **Balanced Mutual Fund** – A **moderate-risk** option with an expected return of 10-12% but with market fluctuations.
3. **Stocks of a Tech Startup** – A **high-risk, high-return** option that could give returns of 20% or more but also has the potential for losses.

### Decision & Outcome:

- If Raj invests in FD, his money is safe, but the returns are low and barely beat inflation.
- If he chooses the balanced mutual fund, he gets a balance between risk and return, with the possibility of higher earnings but some short-term volatility.
- If he invests in the tech startup, he may earn high returns if the company succeeds, but he also risks losing a significant portion of his capital.

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### 3.7 LET US SUM UP

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Managers make problem solving decisions under three different conditions: certainty, risk, and uncertainty. All managers make decisions under each condition, but risk and uncertainty are common to the more complex and unstructured problems faced by top managers. Decisions are made under the condition of certainty when the manager has perfect knowledge of all the information needed to make a decision. This condition is ideal for problem solving. The challenge is simply to study the alternatives and choose the best solution.

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### 3.8 KEYWORDS

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1. **Systematic risk:** Systematic risk is also referred to as non-diversifiable risk or market risk. Systematic risk is the fluctuations in the returns on securities that occur due to macroeconomic factors. These factors could be the political, social or economic factors that affect the business. Systematic risk can be caused due to unfavorable reasons such as an act of nature like a natural disaster, changes in government policy, international economic components, changes in the nation's economy, etc.
2. **Unsystematic risk:** The fluctuations in returns of a company arising due to micro-economic factors are termed as unsystematic risks. These risk factors exist within the company and can be avoided if necessary action is taken. The risk factors can include the production of undesirable products, labor strikes, etc.
3. **Risk return trade off:** Higher risk is associated with greater probability of higher return and lower risk with a greater probability of smaller return. This trade off which an investor faces between risk and return while considering investment decisions is called the risk return trade off.

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### 3.9 SELF-ASSESSMENT QUESTIONS

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- Q1. Define systematic risk with suitable examples
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Q2. Discuss the various causes of risk

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Q3. Give the definition of risk, certainty and uncertainty

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### **3.10 LESSON END EXERCISE**

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Q1 Explain the concept of risk. How risk can be measured?

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Q2 Discuss in detail the types of risk.

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Q3 Explain in detail the relationship between risk and return.

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### 3.11 ANSWER KEY

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#### Check Your Progress A

1. False
2. True
3. True
4. False

#### Check Your Progress

- b) A global financial crisis
- b) The risk that a borrower may default on a loan
- c) Unsystematic risk
- a) The risk that an asset cannot be sold quickly without losing value
- b) Systematic risk

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### 3.12 SUGGESTED READINGS

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## **OVERVIEW OF FINANCIAL MANAGEMENT**

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**Lesson No. 4**

**Unit-I (Credit-1)**

**Semester-II**

**MCOMC252**

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### **OBJECTIVES OF FINANCIAL MANAGEMENT; ROLE AND CHALLENGES FACED BY FINANCE MANAGER**

#### **STRUCTURE**

- 4.0 Learning Objectives and Outcomes
- 4.1 Introduction
- 4.2 Objectives of Financial Management
- 4.3 Building Blocks of Modern Finance
- 4.4 Organisation of the Finance Function
- 4.5 Relationship of Finance to Economics and Accounting
- 4.6 Role of the Finance Manager in India
- 4.7 Challenges Faced by Finance Manager
- 4.8 Let Us Sum Up
- 4.9 Keywords
- 4.10 Self-Assessment Questions
- 4.11 Lesson End Exercise
- 4.12 Answer Key
- 4.13 Suggested Readings

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## **4.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

Through this lesson students will be able to:

- understand the building blocks of modern finance
- identify the relationship of finance to accounting and economics
- define the role of financial manager in India and
- explain the challenges faced by finance managers.

### **Learning Outcomes**

At the end of this lesson student be will be able to:

- comprehend the role and functions of finance manager
- grab the evolution of financial management and
- understand the challenges faced by finance manager.

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## **4.1 INTRODUCTION**

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Dear learners 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.

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## 4.2 OBJECTIVES OF FINANCIAL MANAGEMENT

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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:

- **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.
  - uses the finance of the company properly
- **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.

- **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 requirements 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.
- **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.
- **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 profitably. 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.

- **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.
- **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.
- **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 its profit as reserves. Reserves can be used for future growth and expansion. It can also be used to face contingencies in the future.
- **Proper coordination:** Financial management must try to have proper coordination between the finance department and other departments of the company.
- **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.
- **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.
- **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 and to avoid wastage & misuse of finance.

- **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 is minimised.
- **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.
- **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.

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### 4.3 BUILDING BLOCKS OF MODERN FINANCE

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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, reorganisation, 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

1. **Portfolio theory:** Formation of an optimal portfolio of securities.
2. **Capital asset pricing theory:** Determination of asset prices under conditions of uncertainty.

- 3. Option pricing theory:** Determination of the prices of contingent claims such as call
- 4. 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.

#### **A. CHECK YOUR PROGRESS**

##### **Multiple Choice Questions**

##### **1. What is the primary objective of financial management?**

- a) Maximizing profits
- b) Ensuring employee satisfaction
- c) Maximizing shareholder wealth
- d) Reducing operational expenses

**Answer: c) Maximizing shareholder wealth**

##### **2. Which of the following is a key financial management objective related to liquidity?**

- a) Ensuring the firm has enough cash to meet short-term obligations
- b) Investing all available cash in long-term assets
- c) Maximizing profits at the cost of liquidity
- d) Ignoring cash flow management

**Answer: a) Ensuring the firm has enough cash to meet short-term obligations**

##### **3. Financial management aims to achieve optimal capital structure by balancing:**

- a) Short-term and long-term investments
- b) Debt and equity financing
- c) Fixed and variable costs

d) Production and marketing expenses

**Answer: b) Debt and equity financing**

**4. Which of the following is NOT an objective of financial management?**

a) Ensuring cost control and efficiency

b) Achieving maximum risk in all investments

c) Maintaining financial stability and solvency

d) Maximizing return on investment

**Answer: b) Achieving maximum risk in all investments**

**5. How does financial management contribute to business growth?**

a) By making random investment decisions

b) By ensuring funds are allocated to profitable projects

c) By avoiding all forms of debt financing

d) By focusing only on short-term profits

**Answer: b) By ensuring funds are allocated to profitable projects**

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#### **4.4 ORGANISATION OF THE FINANCE FUNCTION**

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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:

4.4.1 The engineer, who proposes a new plant, shapes the investment policy of the firm.

4.4.2 The marketing analyst provides inputs in the process of forecasting and planning.

4.4.3 The purchase manager influences the level of investment in inventories.

4.4.4 The sales manager has a say in the determination of the receivables policy.

4.4.5 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 4.1. 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.

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

Exhibit 4.1 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 4.3.

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.

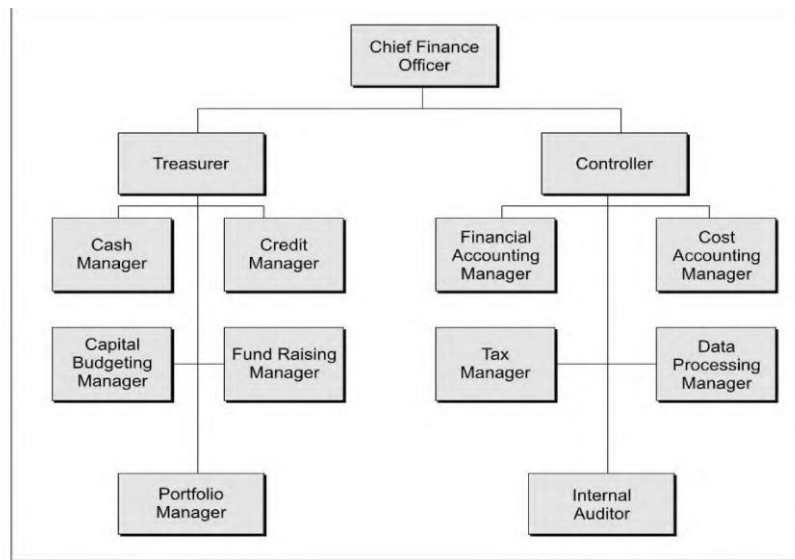


Exhibit 4.2 Organisation of Finance Function

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## 4. RELATIONSHIP OF FINANCE TO ECONOMICS AND ACCOUNTING

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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 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.

## **B. CHECK YOUR PROGRESS**

### **Fill in the Blanks**

1. \_\_\_\_\_ is the process of managing financial risks using techniques like diversification, hedging, and derivatives.  
(Answer: Risk management)

2. The concept of \_\_\_\_\_ suggests that markets are efficient, and asset prices reflect all available information.

**(Answer: Efficient Market Hypothesis)**

3. \_\_\_\_\_ is a modern finance approach that focuses on balancing risk and return to create an optimal investment portfolio.

**(Answer: Modern Portfolio Theory)**

4. The rise of \_\_\_\_\_ has revolutionized financial transactions, using blockchain technology for secure and decentralized exchanges.

**(Answer: Cryptocurrency)**

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#### **4.6 ROLE OF THE FINANCE MANAGER IN INDIA**

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Until the early 1990s, the finance 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.

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

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#### **4.7 CHALLENGES FACED BY FINANCE MANAGERS IN GLOBALISATION ERA**

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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:

1. What is the financial position of the firm at a given point of time?
2. How has the firm performed financially over a given period of time?

3. 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.

**b. Financial structure**

Once a manager 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.

In India, also, 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.

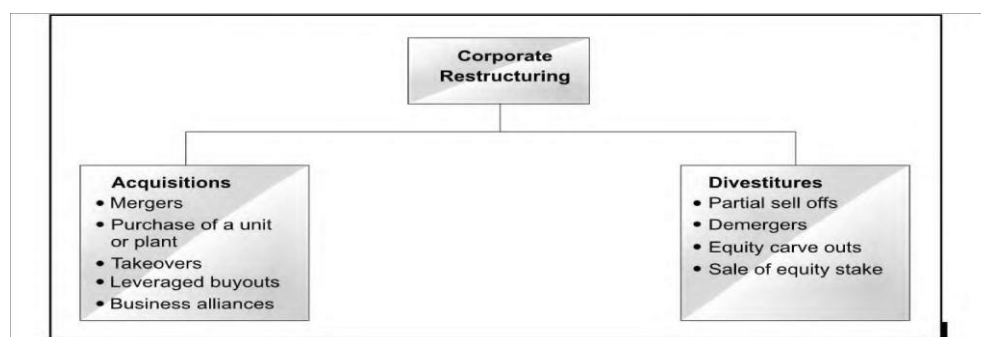


Fig 4.1 Types of corporate restructuring

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

- 1. 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 Compaq 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.

2. **Purchase of Division or Plant:** A company may acquire 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. It must be noted that in a transaction of this kind only a portion of the assets and liabilities of one company are taken over by another company.
  3. **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.
  4. **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:
1. **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.
  2. **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.

3. **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.
4. **Equity Carve out:** In an equity carve out, 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.
5. **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.”

**f. Risk management**

Risk Management is the process of identifying, assessing and controlling financial, legal, strategic and security risk to an organisation’s capital and earnings to reduce risk, an organisation needs to apply resources to minimize, monitor and control the impact of negative events while maximising positive events. By focusing attention on risk and committing the necessary resources to control and mitigate risk, a business will protect itself from uncertainty, reduce costs and increase the likelihood of business continuity and success.

**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, it can give rise to possible conflicts between managers and shareholders due to the separation of ownership and control.

To meet the expectations of investors and analysts, company managers must develop a strategic approach for messaging, earning calls, guidance, conferences, investor interactions etc.

**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.

### **C. CHECK YOUR PROGRESS**

#### **Fill in the Blanks**

- \_\_\_\_\_ is a major challenge in financial management, as businesses must balance debt and equity to minimize costs and risks.  
(Answer: Capital structure management)
- Rapid changes in \_\_\_\_\_ can create uncertainty in investment decisions and affect profitability.  
(Answer: Market conditions)
- \_\_\_\_\_ risk arises when businesses operate in multiple countries and are affected by currency fluctuations.  
(Answer: Foreign exchange)
- Managing \_\_\_\_\_ effectively is crucial to ensure a company has enough liquidity to meet short-term obligations.  
(Answer: Cash flow)

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### **4.8 LET US SUM UP**

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.

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## 4.9 KEYWORDS

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- **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.

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#### 4.10 SELFASSESSMENT QUESTIONS

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Q1. What forces are prodding companies in India to accord greater importance to the goal of shareholder wealth maximisation?

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Q2. Describe briefly the building blocks of modern finance.

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Q3. Why is there a separation of ownership and management in large companies?

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### **4.11 LESSON END EXERCISE**

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Q1. “Financial management is in many ways an integral part of the jobs of managers.” Comment.

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Q2. How the finance function is typically organised in a large company?

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Q3. Discuss the relationship of financial management to economics and accounting.

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Q4. Comment on the emerging role of the financial manager in India.

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5. Explain the various challenges faced by financial manager.

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#### **4.12 ANSWER KEY**

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##### **Check Your Progress A**

- c) Maximizing shareholder wealth
- a) Ensuring the firm has enough cash to meet short-term obligations
- b) Debt and equity financing
- b) Achieving maximum risk in all investments
- b) By ensuring funds are allocated to profitable projects

##### **Check Your Progress B**

- 1. Risk management
- 2. Efficient Market Hypothesis
- 3. Modern Portfolio Theory
- 4. Cryptocurrency

##### **Check Your Progress C**

- 1. Capital structure management
- 2. Market conditions
- 3. Foreign exchange
- 4. Cash flow

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#### **4.13 SUGGESTED READINGS**

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## **OVERVIEW OF FINANCIAL MANAGEMENT**

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**Lesson No. 5**

**Unit-I (Credit-1)**

**Semester-II**

**MCOMC252**

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### **FINANCIAL PLANNING AND FORECASTING; ETHICS IN FINANCE**

#### **STRUCTURE**

- 5.0 Learning Objectives and Outcomes
- 5.1 Introduction
- 5.2 Securities traded in financial markets
- 5.3 Financial planning and forecasting
- 5.4 Qualitative Factors Affecting Financial Planning and Policies
- 5.5 Ethics in Finance
- 5.6 Let Us Sum Up
- 5.7 Keywords
- 5.8 Self-Assessment Questions
- 5.9 Lesson End Exercise
- 5.10 Answer Key
- 5.11 Suggested Readings



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## **5.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

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

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- to explain the difference between risk and certainty;
- to discuss the various techniques used in the measurement of risk and
- to comprehend the trade-off between risk and return.

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## **5.1 INTRODUCTION**

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Dear students as we all know that 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.

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## **5.2 SECURITIES TRADED IN FINANCIAL MARKETS**

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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.

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## 5.3 FINANCIAL PLANNING AND FORECASTING

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We know that planning is a systematic way of deciding about and doing things in a purposeful manner. When this approach is applied exclusively for financial matter, it is termed as financial planning. In connection with any business enterprise, it refers to the process of estimating a firm's financial requirements and determining pattern of financing. It includes determining the objectives, policies, procedures and programmes to deal with financial activities. Thus, financial planning involves:(a) estimating the amount of capital to be raised;(b) determining the pattern of financing i.e., deciding on the form and proportion of capital to be raised;(c) and formulating the financial policies and procedures for procurement ,allocation and effective utilisation of funds.

Forecasting provides key information and pertinent facts relating to the future. It is essentially a technique of anticipation which involves the use of sophisticated statistical analysis for the future. It provides an intellectual basis for formulating various plans. Financial forecasting is concerned with the projection of future financial performance,

condition, flows, and requirements. It enables the firm to protest the financial feasibility of various policies and actions, it facilitates the raising of funds by enhancing the confidence of lenders in the management of the firm, it provides a basis of control and improves the utilization of resources.

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 5.1.

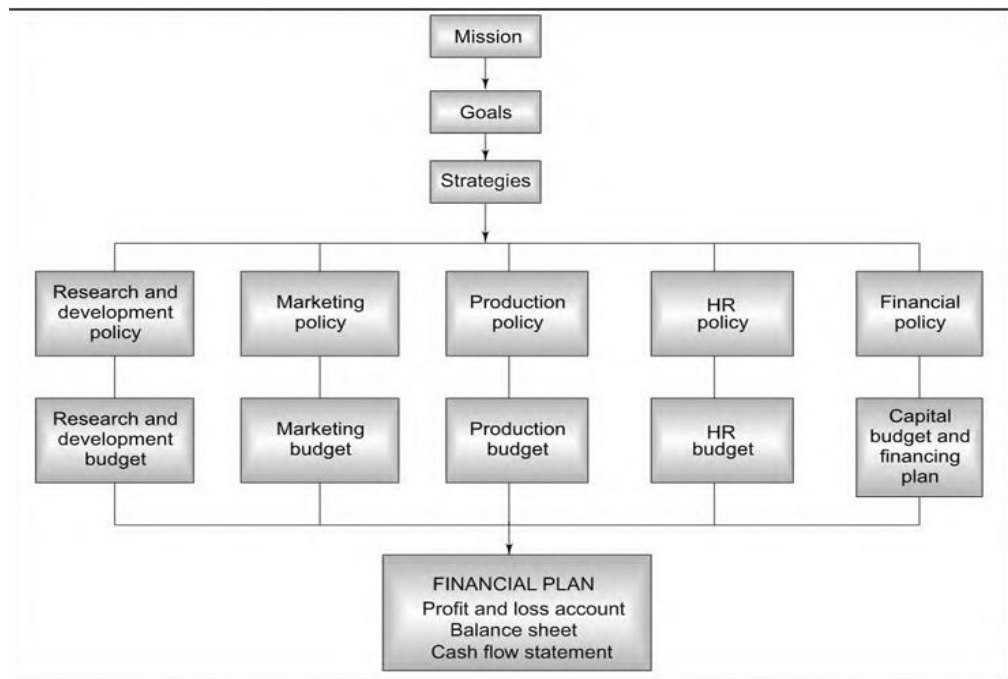


Exhibit 5.1

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. The following are the benefits of financial planning:

1. Identifies advance actions to be taken in various areas.
2. Seeks to develop a number of options in various areas that can be exercised under different conditions.
3. Facilitates a systematic exploration of interaction between investment and financing decisions.
4. Clarifies the links between present and future decisions.
5. Forecasts what is likely to happen in future and hence helps in avoiding surprises.
6. Ensures that the strategic plan of the firm is financially viable.
7. Provides benchmarks against which future performance may be measured.

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### **Sales Forecast**

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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:

1. **Qualitative Techniques:-** These techniques rely essentially on the judgement of experts to translate qualitative information into quantitative estimates.
2. **Time Series Projection Methods:-** These methods generate forecasts on the basis of an analysis of the past behaviour of time series.
3. **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.

## **A. CHECK YOUR PROGRESS**

Multiple Choice Questions

### **1. What is the primary objective of financial planning?**

- A) Maximizing short-term profits
- B) Ensuring financial stability and growth
- C) Reducing employee wages
- D) Avoiding tax payments

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### **2. Which of the following is a key component of financial forecasting?**

- A) Historical financial data
- B) Employee satisfaction surveys
- C) Random market assumptions
- D) Personal opinions of managers

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### **3. What is the main difference between financial planning and financial forecasting?**

- A) Financial planning focuses on future goals, while financial forecasting predicts future financial outcomes
- B) Financial forecasting is only used for tax purposes, while financial planning is used



for investments

C) Financial planning is short-term, while financial forecasting is long-term

D) Financial forecasting eliminates all financial risks

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**4. Which financial statement is most commonly used for financial forecasting?**

A) Balance Sheet

B) Income Statement

C) Cash Flow Statement

D) All of the above

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**5. What is a common method used in financial forecasting?**

A) SWOT Analysis

B) Time Series Analysis

C) Employee Feedback Surveys

D) Brand Awareness Index

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## **5.4 QUALITATIVE FACTORS AFFECTING FINANCIAL PLANNING AND POLICIES**

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Financial planning is an essential and significant financial process. It affects the earning capacity, profitability and solvency of the business concern. For the success and progress of business enterprises, it is essential that available resources must be utilised in an optimal way and as far as possible the capital should not be misused.

The following are the various qualitative factors affecting financial planning and policies :-

- 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. 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:

1. relieving anxiety
2. imparting a sense of control
3. 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 decision-making 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.

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## 5.5 ETHICS IN FINANCE

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The term 'Ethics' is derived from the Greek word 'ethos' which means character or ways of behaviour. It refers to a generally accepted set of principles and standards used by an individual, institution, profession or society in general (as part of social ethics, professional ethics etc) to guide their thoughts, behaviour and actions; to determine the goodness/badness or rightness/wrongness of thoughts, behaviour and action. Ethics is essentially about making the right choices/decisions. Thus, ethics can be regarded as that science which is concerned with moral behaviour or with right or wrong and good or evil of human behaviour. It propounds those principles which make our conduct moral.

Ethics in Finance is concerned with financial behaviour or activities that are ethically right or wrong. Business ethics that are followed by financial institutions, financial markets or financial services are the integral parts of ethics in finance. It

is generally used for describing finance which takes into account the ethical channelization of financial returns along with ESG (environmental, social, and governance) factors. The ethics in finance incorporate truthfulness, integrity, honesty, justice, and fairness in all sorts of financial activities. Financial ethics or business ethics are actually subsets of general ethics. It is crucial for maintaining harmony and stability in financial services where people interact with one another and do any sort of financial or monetary transactions.

Finance talks about the market or other financial resources for example financial markets, investment, insider trading, etc. The field of finances is diverse, and it is mainly about the definition and interrelation of many factors such as money, risk, and time. These are assets that take the form of money, where banks serve as the primary facilitators.

In the domain of financial markets, there are a plethora of activities that deal with the management of monetary funds. This backbone can help and direct companies in conducting their business. Companies can use this as a metric to know their position in the market and leverage it to win a position over others. The knowledge of finances is also essential for making future investments, acquisitions, and other decisions. It is the heart and brain of any organization and has to be carefully followed. Ethics governs the course of action taken by a human that can be right or wrong. Generally speaking, ethics form the person's to do right; and they can be specified in terms of a profession or even an organization in the form of business ethics. Since a company is primarily based on financial needs, wants and directives, it must follow the ethics route towards the future. This can be achieved both internally and externally, thereby resulting in a suitable economic environment for employees, stakeholders as well as market position. Ethics is one of the most critical and intricate aspects of an organization, especially in domains like finances. There is either "right" or "wrong" associated with any human action based on the organization's conventional morality and business ethics.

### **Importance of Ethics in Finance**

Finance ethics is highly crucial because of the countless scandals and ethical issues of the financial industry. Ethics in the finance sector mainly revolves around the handling of material and reporting of the unethical act.

#### **1. Provides a moral code of standard**

In the financial market, some barriers range from unequal information, misuse of power and resources, etc. In such cases and those which involve third-party connections, there is a dire need for a proper code to be followed in the industry. From investment to trading to stock to economical activities of the corporate or finance system, all follow an ethical code

in all their transactions

**2. Channelizes confidence in business/corporate dealings**

The main objective of the financial industry is to have direct dealings with the industry. These directly connect to their clients in the form of a product or service delivery where they look forward to winning their confidence. Despite the primary objective to maintain a competitive stature in the industry, they must do so on ethical grounds. In addition to such practices, being ethically right will give businesses good returns in the long term.

**3. Makes business/corporate behavior and activities harmonious**

In the financial industry, we can expect many people to be part of an organization. Since these have to work together at different levels and towards a similar core objective, there has to be a set of ethical rules and guidelines that have to be followed. This will help in proper management and higher productivity from the employees.

**Codes of Ethics in Finance**

Different moral codes that are supposed to be followed the finance-related behavior of a company towards its employees, customers, public and other stakeholders-

1. Acting with honesty and integrity while handling dilemmas of the world of finances
2. Not associating with any real/clear conflicts of interest in personal, or company relationships
3. Providing information that is full, accurate, fair, complete, relevant, objective, understandable, and timely in and for different documents and reports
4. Acting in accordance with all the applicable rules, laws, and regulations of governments along with other relevant public/private regulatory agencies
5. Acting responsibly and in good faith with due care, carefulness, and competence without any sort of misrepresentation of material facts
6. Respecting the confidentiality of information which is acquired in the business course and such information should not be used for the personal benefit
7. Promoting ethical behavior among all the associates and stakeholders of a company
8. Adhering and promoting a code of ethics in the company

## **Key Terms of financial or business ethics**

Key terminologies that are an integral part of the information, investment, stock, trading, customers, and transaction sorts of activities of finances are-

- **ESG:** The full form of ESG is Economical, Social and governance, and their positive impact show if the finances-system and related information are ethical or not.
- **Green finances:** It talks about finance that focuses on offering measurable and positive environmental results
- **Principles for responsible investment:** It is a set of six principles that give a global standard for responsible investment
- **Shariah-compliant finances:** It talks about the finance information and activities that are supported by Islamic-based principles
- **Sustainable finances:** It is commonly used in substitution for ethics finances
- **UN Global compact:** It is a voluntary initiative based on CEO commitments for the implementation of ten universal sustainability principles such as environmental responsibility, human rights, employee relations, anti-bribery and corruption, and business ethics.

## **Implementation of ethics in finances**

To deal with ethical problems in finances like those ranging from ethical codes in place for financial professionals to the replacement of the egoistic theory, there are a large variety of domains covered in business ethics. It is not an uncommon practice of applying ethical means in contemporary businesses. These codes adhering to a morally established financial set of ethics are regulated and maintained by self-regulating agencies and official regulating authorities. These are kept in place to ensure ethically and morally responsible behaviour from the various operatives that operate in the financial market.

Example of ethical violations in the financial market includes insider trading, investor management, campaign financing, and stockholder interest vs stakeholder interest. Businesses in both financial and general markets have

to be wary of loyalty and trust violations in both private and public dealings.

Over the years, there have been multiple cases of whistleblowing in the world. People have been involved in cases where just the knowledge of such practices landed them in problems. No one prefers to blow a whistle on their fellow worker or the organization. Still, it is also an essential and ethical duty to ensure that fair practices are being followed in the financial industry or society. For instance, take the example of Harshad Mehta in the 20th century. It was the morally responsible ethics of a news reporter to make sure such practices were reported. The examples discussed above are just a handful compared to the various ethical situations and dilemmas faced by finance-professionals every day.

Over these years, these professionals' involvement in countless various allegiances and scandals has given these professionals a black eye and completely rocked the industry.

With proper knowledge of the guidelines that have to be followed, encouragement of ethics-driven behaviour in the workplace, and following the highest standards of applied ethics is crucial for every finance professional today.

### **Unethical behaviour in financial markets**

1. **Faking the numbers:** In the reporting and analysis of finances, economics, investment, or business activities, "faking the numbers" is one of the common unethical behaviors.
2. **Asset misappropriation:** When funds of an organization are used for the things that are not related to the organisation then it is an unethical act.
3. **Disclosure concerns:** Disclosing information (public or private) overly or disclosing too little is also unethical in different situations. For instance, hiding a loss from potential investors is unlawful.
4. **Executive focusing:** Another unethical concern is focussing too much upon the executives and giving them too much power, as it may give power to the executive to pressure the reporting and analysis team.



5. **No direct chain of command:** Every company should incorporate a proper chain of command for offering reporting and analysis of the finances, and if it is not there, it would be unethical.

Thus, in the financial industry, the participating organizations must follow a proper ethics code. This is necessary for the internal functioning of the organization as well as external decisions that affect it. Since finance is the backbone of any business and ethics are of similar importance, ethics in finance must be followed religiously without any discrepancy.

## **B. CHECK YOUR PROGRESS**

### **Fill in the Blanks**

- \_\_\_\_\_ is the practice of using confidential information to trade stocks for personal gain, which is considered unethical and illegal.  
(Answer: Insider trading)
- Financial professionals must adhere to the principle of \_\_\_\_\_, ensuring honesty and transparency in all financial dealings.  
(Answer: Integrity)
- \_\_\_\_\_ occurs when a financial professional has a personal interest that could interfere with their duty to act in the best interests of clients or stakeholders.  
(Answer: Conflict of interest)
- The \_\_\_\_\_ Act was enacted in response to major corporate scandals to improve corporate governance and financial disclosures.  
(Answer: Sarbanes-Oxley)
- Ethical financial decision-making requires adherence to the principles of fairness, accountability, responsibility, and \_\_\_\_\_.  
(Answer: Transparency)

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## **5.6 LET US SUM UP**

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Dear learners at the end of this lesson you must have understood that 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. 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.

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## 5.7 KEYWORDS

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- **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.

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## 5.8 SELF ASSESSMENT QUESTIONS

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Q1. Define the securities which are traded in financial market?

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Q2. Explain the unethical behaviour in financial markets.

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## 5.9 LESSON END EXERCISE

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Q1. Discuss in detail the role of ethics in finance.

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Q2. Explain in detail financial planning and forecasting.

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Q3. What are the benefits of financial planning?

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Q4. Describe briefly the types of sales forecasting techniques and methods.

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## 5.10 ANSWER KEY

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### Check Your Progress A

- B) Ensuring financial stability and growth  
A) Historical financial data  
A) Financial planning focuses on future goals, while financial forecasting predicts future financial outcomes  
D) All of the above  
B) Time Series Analysis

### Check Your Progress B

1. Insider trading
2. Integrity
3. Conflict of interest
4. Sarbanes-Oxley
5. Transparency

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## 5.11 SUGGESTED READINGS

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- Banerjee, B. (2015). *Fundamentals of financial management*. PHI Learning Pvt. Ltd.
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## **CAPITAL BUDGETING AND COST OF CAPITAL**

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**Lesson No. 6**

**Unit-II (Credit-1)**

**Semester-II**

**MCOMC252**

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### **CONCEPT, NATURE, IMPORTANCE & PROCESS OF CAPITAL BUDGETING**

#### **STRUCTURE**

- 6.0 Learning Objectives and Outcomes
- 6.1 Introduction
- 6.2 Concept of Capital Budgeting
- 6.3 Nature of Capital Budgeting
- 6.4 Types of Investment Decision
- 6.5 Importance of Capital Budgeting
- 6.6 Process of Capital Budgeting
- 6.7 Let Us Sum Up
- 6.8 Keywords
- 6.9 Self- Assessment Questions
- 6.10 Lesson End Exercise
- 6.11 Answer Key
- 6.12 Suggested Readings

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## **6.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- understand the concept of capital budgeting
- apprehend nature and types of capital budgeting and
- explain the process of capital budgeting.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- comprehend the basics of capital budgeting and
- implement the process of capital budgeting in real time situations.

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## **6.1 INTRODUCTION**

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Dear students as we all know that 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.

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## **6.2 CONCEPT OF CAPITAL BUDGETING**

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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 complex decisions to make.

**Influence the firms 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 of the firm:-** 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.

6.1.1.1 **Large amount of funds:-** 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.

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## 6.2 NATURE OF CAPITAL BUDGETING

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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.

#### A. CHECK YOUR PROGRESS

##### Multiple Choice Questions

**Which of the following is NOT a technique used in capital budgeting?**

- a) Net Present Value (NPV)
- b) Internal Rate of Return (IRR)
- c) Payback Period
- d) Gross Profit Margin

**2. The discount rate used in the Net Present Value (NPV) method is usually based on:**

- a) The expected rate of inflation
- b) The cost of capital or required rate of return
- c) The total revenue of the company
- d) The net income of the project

**3. If a project's Internal Rate of Return (IRR) is greater than the cost of capital, the project should be:**

- a) Rejected
- b) Accepted
- c) Postponed
- d) Ignored

**4. The Payback Period method focuses on:**

- a) The time required to recover the initial investment
- b) The total profit generated by the project
- c) The Net Present Value (NPV) of the project
- d) The accounting rate of return

**5. Which capital budgeting technique considers the time value of money?**

- a) Payback Period
- b) Accounting Rate of Return (ARR)
- c) Net Present Value (NPV)
- d) None of the above

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## **6.3 TYPES OF INVESTMENT DECISIONS**

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There are many ways to classify investments. Some of them are mentioned below:

### **1 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.

### **2 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.

### **3 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 labour-

intensive, semi-automatic machine, or employ a more capital-intensive, highly automatic machine for production. Choosing the semi-automatic machine precludes the acceptance of the highly automatic machine.

#### **4 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.

#### **5 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.

### **B. CHECK YOUR PROGRESS**

#### **Fill in the Blanks**

- Investment decisions are also known as \_\_\_\_\_ decisions.
- The two main types of investment decisions are \_\_\_\_\_ and \_\_\_\_\_.
- Investment decisions that involve selecting new projects for business growth are called \_\_\_\_\_ decisions.

- Decisions related to replacing old assets with new ones to improve efficiency are known as \_\_\_\_\_ decisions.
- Investment decisions should be evaluated based on factors like risk, return, and \_\_\_\_\_.

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## 6.4 IMPORTANCE OF CAPITAL BUDGETING

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Capital Budgeting project is important for the evaluation of any particular project of the organization. The growth and prosperity of the business is affected by the capital budgeting decisions of the organization in the long run. Also, the capital budgeting process creates the measurability and accountability of the project by using various techniques like calculation of net present value, considering the internal rate of return, payback period, profitability index, and accounting rate of return. Generally, the value of future net cash flows is determined by taking the discounted rate of return in the calculation.

The following are the points describing the importance of Capital Budgeting:

- **Calculation of future cash flows:** Capital Budgeting process takes into account the expected future cash inflows and the expected future cash outflows of the project by taking into account the discounted rate of return and following the various techniques like calculation of net present value, considering the internal rate of return, payback period, profitability index, and accounting rate of return. Thus, the organization gets the idea about present investment's future total value and the net profitability by using the process of capital budgeting.
- **Helps in the long term goals of the organization:** Capital Budgeting process helps the organization for the long term decision making as well as in making the long term goals as it provides the idea of

future costs and growth taking into account the expected future cash flows. The making of long term goals is the most important and sensitive area for any organization and any wrong decision taken in this area can adversely affect the long term profitability of the organization.

- **Control of expenditure:** The capital budgeting process gives the idea of the expected future cash inflows as well as expected future cash outflows. It takes into account the investment cost for the project considering the other related expenditures like Research & Development costs, running costs of the project, etc. So, with this information, the organization can monitor the total costs and have control of its future costs. The proper management and control of the total costs is a very important factor for the growth and efficiency perspective of the company.
- **Helps in permanent decision making:** Generally, the Capital related decisions are the permanent decisions taken by the organization as it involves the large amount of investments and funds. Such decisions cannot be reversed back in the future once they are taken. Hence, the process of capital budgeting helps in effective decision making for such permanent decisions of the organization.
- **Wealth maximization:** The interest and the investment decisions of the shareholders in the company depend on its long term investment decisions. If the investments in the capital or other long term investments are done by the company in the proper and planned manner, the confidence of the shareholders gets boost up and thus, they become more interested in investing in the company thus, resulting in the company's wealth maximization.
- **Flow of information within the departments:** The entire process of capital budgeting involves numerous steps and ideas and a number of decisions are taken by the different levels of the



company. This allows the flow and exchange of information within the various departments and thus, increases the connectivity between them.

- **Protection to the large funds involved:** As discussed earlier, there involves a large amount of funds by the company in the acquisition of the capital assets. Thus, with the process of capital budgeting, that large financial investment or a large amount of funds invested by the company gets protected to a certain extent against any uncertainty in future.
- **Protection against future risks:** There are various risks that are associated with capital acquisitions by the company as they all are related to some future events and uncertainty. Thus, the capital budgeting process helps the organization in the advance assessment of those risks involved, and the management of the company plans for the protection of such risks well in advance to minimize its impact.
- **New Opportunities in the market:** With the introduction of the new project in the market, there arises many job opportunities for the new employees as well as the existing ones. This gives rise to the economic growth of the country along with boosting up the morale of personals.
- **Understanding the complications of the projects:** With the help of the capital budgeting process, the management of the company can have the idea of different types of complications or complexities that can be faced or arise during the development of the project. Hence, the management can have ready and advance strategies for dealing with such future complexities arising from the project.

The capital Budgeting process generally helps the company in taking

two types of decisions: Investment decisions and financing decisions. When there is no proper planning regarding the development of the project, there is always the risk of the sudden cost increase, delay in the development of the project, regulatory complications, etc. Thus, every company should have the proper capital budgeting processes taken place well in advance before initiating any large investment capital project. Apart from the above risks, the capital budgeting processes helps to evaluate the growth and profitability of the projects. This can also help to compare the profitability of different projects to be carried out by the company and in prioritization of one project over the other. Also, the company will come under safe conditions in terms of the regulatory requirements which results in the boost up of the various shareholders' investment in the company.

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## 6.5 PROCESS OF CAPITAL BUDGETING

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



*Fig 6.1 Process of capital Budgeting*

**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.

**II. Assembling investment proposal:** 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.

**III. 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 long-term 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 the 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 management 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 organisation.

### **C. CHECK YOUR PROGRESS**

#### **Multiple Choice Questions**

1. Which of the following is the first step in the capital budgeting process?
  - a) Project evaluation

- b) Identification of investment opportunities
  - c) Selection of the best alternative
  - d) Implementing the project
2. After evaluating and selecting a project, the next step in capital budgeting is:
- a) Implementation
  - b) Identifying investment opportunities
  - c) Risk analysis
  - d) Performance review
3. The process of reviewing and comparing actual project performance with estimated performance is known as:
- a) Project selection
  - b) Post-audit or performance review
  - c) Risk assessment
  - d) Discounted cash flow analysis
4. Which factor is NOT considered during project evaluation in capital budgeting?
- a) Cost of investment
  - b) Expected cash flows
  - c) Employee preferences
  - d) Time value of money
5. Capital budgeting is important because it helps in:
- a) Short-term decision-making
  - b) Managing daily operations
  - c) Evaluating long-term investment decisions
  - d) Reducing employee turnover
6. One of the key benefits of capital budgeting is:
- a) It ensures quick profits
  - b) It helps in long-term financial planning
  - c) It eliminates business risks
  - d) It focuses only on short-term projects
7. Capital budgeting decisions are crucial for a company because they:
- a) Involve large investments with long-term impacts
  - b) Have no impact on company growth
  - c) Only affect short-term liquidity
  - d) Can be easily reversed without financial consequences

8. Which of the following is a risk associated with poor capital budgeting decisions?

- a) Increased employee morale
- b) Financial losses and inefficiency
- c) Immediate profit maximization
- d) Reduction in total assets

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## 6.6 LET US SUM UP

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Dear students at the end of this lesson you must have been able to deploy capital budgeting decisions over the long-term 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.

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.

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## 6.7 KEYWORDS

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- **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.



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## 6.8 SELF ASSESSMENT QUESTIONS

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Q1. Explain the various types of investment decision.

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

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3. Explain the nature of capital budgeting.

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## 6.9 LESSON END EXERCISE

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1. Explain the process of capital budgeting.

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2. Describe the investment decision criteria.

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3. Explain the importance of investment decisions.

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### **6.10 ANSWER KEY**

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#### **Check Your Progress A**

- d) Gross Profit Margin
- b) The cost of capital or required rate of return
- b) Accepted
- a) The time required to recover the initial investment
- c) Net Present Value (NPV)

#### **Check Your Progress B**

- 1. Capital budgeting
- 2. Expansion decisions, Replacement decisions
- 3. Expansion
- 4. Replacement
- 5. Cost of capital

## Check Your Progress C

- b) Identification of investment opportunities
- a) Implementation
- b) Post-audit or performance review
- c) Evaluating long-term investment decisions
- c) Employee preferences
- b) It helps in long-term financial planning
- a) Involve large investments with long-term impacts
- b) Financial losses and inefficiency

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## 6.12 SUGGESTED READINGS

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## **CAPITAL BUDGETING AND COST OF CAPITAL**

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**Lesson No. 7**

**Unit-II (Credit-1)**

**Semester-II**

**MCOMC252**

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### **TECHNIQUES OF CAPITAL BUDGETING- PAYBACK PERIOD, ACCOUNTING RATE OF RETURN, NET PRESENT VALUE METHOD, INTERNAL RATE OF RETURN AND PROFITABILITY INDEX METHOD; COST BENEFIT ANALYSIS IN CAPITAL BUDGETING**

#### **STRUCTURE**

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## **7.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- explain the concept of capital budgeting
- apprehend the different types of decisions and their acceptance rule and
- understand the techniques of capital budgeting.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- explain the significance of capital budgeting
- comprehend the techniques of capital budgeting and
- understand the acceptance and rejection criterion of capital budgeting decisions.

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## **7.1 INTRODUCTION**

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As we all know that 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.

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## **7.2 FACTORS INFLUENCING INVESTMENT DECISION**

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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:

7.2.1        ***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.

**7.2.2 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.

**7.2.3 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.

**7.2.4 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.

**7.2.5 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.

**7.2.6 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.

7.2.7      **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.

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### 7.3      **KINDS OF CAPITAL BUDGETING DECISIONS**

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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.

### **A. CHECK YOUR PROGRESS**

#### **Multiple Choice Questions**

- Which of the following is NOT a type of capital budgeting decision?
  - a) Expansion decision
  - b) Replacement decision
  - c) Working capital management
  - d) Diversification decision
  
- Capital budgeting decisions are based on:
  - a) Short-term profitability
  - b) Long-term investment and returns
  - c) Immediate revenue generation
  - d) Employee satisfaction
  
- A company deciding whether to invest in a new factory or upgrade existing machinery is making a:
  - a) Financing decision
  - b) Capital budgeting decision
  - c) Dividend decision
  - d) Liquidity decision
  
- Which factor is MOST important when making a capital budgeting decision?
  - a) Personal preferences of managers
  - b) Estimated future cash flows
  - c) Competitors' marketing strategies
  - d) Employee work schedules
  
- If a company chooses to replace an old machine with a new, more efficient one, this is an example of:
  - a) Expansion decision

- b) Replacement decision
- c) Retrenchment decision
- d) Merger decision

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## 7.4 TECHNIQUES OF EVALUATING CAPITAL BUDGETING

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

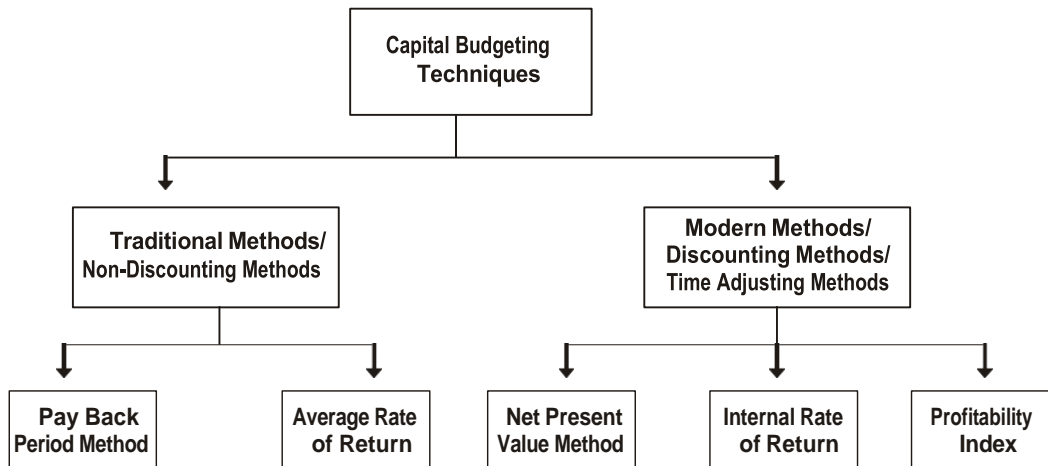


Fig 7.1 Capital budgeting techniques

### 1. Traditional Techniques/Non-discounted Cash Flow Criteria

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

### 2. Discounted Cash Flow (DCF) Criteria

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

These techniques are discussed in detail below:-

### **1. Traditional Techniques/Non Discounted Techniques Cash flow Criteria:**

These methods are based on the principles to determine the desirability of an investment project on the basis of its useful life and expected returns.

**(i) Pay back Period :** It is 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:

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

For Example, you have investment H100,000 in a project with an annual payback of H20,000.

In this case, payback period will be calculated as:-

$$\begin{aligned} \text{Payback Period} &= \frac{\text{Initial Investment}}{\text{Annual Cash Flow}} \\ &= \frac{\text{H } 100000}{20,000} \\ &= 5 \text{ years} \end{aligned}$$

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.

### **Features of Payback period**

1. The payback period is a simple calculation of time for the initial investment to return.
2. It ignores the time value of money. All other techniques of capital budgeting consider the concept of the time value of money.
3. It is used in combination with other techniques of capital budgeting. It cannot be considered as the only techniques to decide the projects to be selected.

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.

### **Disadvantages of Pay Back Method**

Though pay back period method is the simplest, oldest and most frequently used method, it suffers from the following limitations:-

1. It does not take into account the cash inflows earned after the payback period and hence the true profitability of the projects cannot be correctly assessed.
2. This method ignores the time value of money and does not consider the magnitude & timing of cash inflows. It treats all cash flows as equal though they occurring different periods.
3. It does not take into consideration the cost of capital which is a very important factor in sound investment decisions.
4. It may be difficult to determine the minimum acceptable pay back period, it is usually, a subjective decision.
5. It treats each asset individually in isolation with other assets which is not feasible in real practice.

In spite of the above mentioned limitations, this method can be used in evaluating the profitability of short-term and medium-term capital investment proposals.

### **(ii) 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.

- **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 stream 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.

## B. CHECK YOUR PROGRESS

### Practical Based questions

1. A firm whose cost of capital is 10% is considering two mutually exclusive projects X and Y costing 4,00,000 the cash flows of which are given as follow. You are required to compare the profitability of the two projects and state which is financially acceptable as per the NPV method.

	Project X	Project Y	PV of Re. 1
		00	
00		00	
00		00	
00		00	
00			

2. A project has an investment of R. 1,20,000 and yield annual cash inflow of Rs.12,000 for 12 years. Find PB period
  - a. 15 years
  - b. 14 years
  - c. 10 years
  - d. 12 years

## 2. Discounted Cash Flow Techniques:

Discounted cash flow techniques refers to a valuation method that estimates the value of an investment using its expected future cash flows. It attempts to determine the value of an investment today, based on the projections of how much money that investment will generate in the future.

### (i) 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:



1. Cash flows of the investment project should be forecasted based on realistic assumptions.
2. 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.
3. Present value of cash flows should be calculated using opportunity cost of capital as the discount rate.
4. 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.  $NPV > 0$ ).

### **Importance of NPV**

This method is considered as the most appropriate measures of profitability due to the following virtues:-

- a. It explicitly recognizes the time value of money.
- b. It takes into account all the years cash flows arising out of the project over its useful life.
- c. It is an absolute measure of profitability.
- d. A changing discount rate can be built into NPV calculation. This feature becomes important as this rate normally changes because the longer the time span, the lower the value of money and higher the discount rate.
- e. This is the only method which satisfies the terms of absolute amount so the NPVs of the projects can be added which is not possible with other methods.
- f. It is always consistent with the firm's goal of shareholder's wealth maximisation.

### **Demerits of NPV**

- a. This method estimation of cash flows which is very difficult due to uncertainties existing in business world due to various uncontrollable environment factors.
- b. It requires the calculation of the required rate of return to discount the cash flows. The relative desirability of the proposal will change with a change in the discount rate.
- c. when projects under consideration are mutually exclusive, it may not give dependable results if the projects are having unequal

lives, different cash outlay etc.

- d. It does not explicitly deal with certainty when valuing the project and the extent of management flexibility to respond to uncertainty over the life of the project.

### **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 :

1. Accept if  $NPV > 0$
2. Reject if  $NOV < 0$
3. 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.

### **(ii) 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, time-adjusted 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 :-

### **(iii) Profitability 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 :

$$PI = \frac{\text{PV of cash inflows}}{\text{Initial cash outlay}} = \frac{PV(C_1)}{C_0} = \frac{C_1}{(1+K)^1} - CO$$

### **Acceptance Rule**

The following are the PI acceptance rules.

1. Accept if  $PI > 1$
2. Reject if  $PI < 1$
3. 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.

### **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 meaning 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  $IRR > \text{required rate}$ , 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.

### C. CHECK YOUR PROGRESS

#### Case Study

A company, **Green Energy Ltd.**, is considering investing in a **solar power plant**. The project requires an **initial investment** of **\$1,000,000** and is expected to generate **annual cash inflows** of **\$300,000** for the next **5 years**. The company's required rate of return (discount rate) is **10%**. Suggest if company should continue with the project or not.

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## 7.5 COST BENEFIT ANALYSIS IN CAPITAL BUDGETING

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A cost-benefit analysis is a systematic process that businesses use

to analyze which decisions to make and which to forgo. The cost-benefit analyst sums the potential rewards expected from a situation or action and then subtracts the total costs associated with taking that action. Some consultants or analysts also build models to assign a dollar value on intangible items, such as the benefits and costs associated with living in a certain town.

Cost-benefit analysis is the exercise of evaluating a planned action by determining what net value it will have for the company. Basically, a cost-benefit analysis finds, quantifies, and adds all the positive factors. These are the benefits. Then it identifies, quantifies, and subtracts all the negatives, the costs. The difference between the two indicates whether the planned action is advisable. The real key to doing a successful cost-benefit analysis is making sure to include all the costs and all the benefits and properly quantify them. It is the fundamental assessment behind virtually every business decision, due to the simple fact that business managers do not want to spend money unless the benefits that derive from the expenditure are expected to exceed the costs. As companies increasingly seek to cut costs and improve productivity, cost-benefit analysis has become a valuable tool for evaluating a wide range of business opportunities, such as major purchases, organizational changes, and expansions.

The time value of money is a central concept in doing a cost-benefit analysis. The reason is that an amount of money received today has greater value than getting that same amount of money in the future. Compensating for this difference between the present value and the future value of money is essential if a cost-benefit analysis is to accurately quantify the costs and benefits of the action being studied.

Capital budgeting is essentially a cost-benefit analysis that extends the evaluation of costs and benefits into a longer timeframe and therefore greater emphasis is placed on considerations of the time value of money. When the inputs and outputs related to a capital expenditure are quantified by year, they can then be discounted to present value to



determine the net present value of the opportunity at the time of the decision.

### **Steps of Cost-Benefit Analysis**

We all know it's quite simple to make an investment decision when the benefits overshadow the costs, but only a few of us know the other key elements that go into the analysis. The steps to create a meaningful Cost-Benefit Analysis model are:

#### **1. Define the framework for the analysis.**

Identify the state of affairs before and after the policy change or investment on a particular project. Analyze the cost of this status quo. We need to first measure the profit of taking up this investment option instead of doing nothing or being on ground zero. Sometimes the status quo is the most lucrative place to be in.

#### **2. Identity and classify costs and benefits.**

It is essential to costs and benefits are classified in the following manner to ensure that you understand the effects of each cost and benefit.

1. Direct costs (intended costs/benefits)
2. Indirect costs (unintended costs/benefits),
3. Tangible (easy to measure and quantify)/
4. Intangible (hard to identify and measure), and
5. Real (anything that contributes to the bottom line net-benefits)
6. Transfer (money changing hands)

#### **3. Drawing a timeline for expected costs and revenue.**

When it comes to decision making, timing is the most crucial element. Mapping needs to be done when the costs and benefits will occur and how much they will pan out over a phase. It solves two major issues. Firstly, a defined timeline enables businesses to align themselves

with the expectations of all interested parties. Secondly, understanding the timeline allows them to plan for the impact that the cost and revenue will have on the operations. This empowers businesses to better manage things and take steps ahead of any contingencies.

**4. Monetize costs and benefits.**

We must ensure to place all costs and all benefits in the same monetary unit.

**5. Discount costs and benefits to obtain present values.**

It implies converting future costs and benefits into present value. It is also known as discounting the cash flows or benefits by a suitable discount rate. Every business tends to have a different discount rate.

**6. Calculate net present values.**

It is done by subtracting costs from benefits. The investment proposition is considered efficient if a positive result is obtained. However, there are other factors to be considered, as well.

**Principles of Cost-Benefit Analysis:**

- 1. Discounting the costs and benefits** - The benefits and costs of a project have to be expressed in terms of equivalent money of a particular time. It is not just due to the effect of inflation but because a dollar available now can be invested, and it earns interest for five years and would eventually be worth more than a dollar in five years.
- 2. Defining a particular study area** - The impact of a project should be defined for a particular study area. E.g., A city, region, state, nation, or the world. It's possible that the effects of a project may "net out" over one study area but not over a smaller one.
- 3.** The specification of the study area may be subjective, but it can impact the analysis to a significant extent.

4. **Addressing uncertainties precisely** - Business decisions are clouded by uncertainties. It must disclose areas of uncertainty and discretely describe how each uncertainty, assumption, or ambiguity has been addressed.
5. **Double counting of cost and benefits must be avoided** - Sometimes though each of the benefits or costs is seen as a distinct feature, they might be producing the same economic value, resulting in the dual counting of elements. Hence these need to be avoided.

### **Importance of Cost-Benefit Analysis**

1. **Determining the feasibility of an opportunity:** Nobody wants to incur losses in business. When a massive sum of money is invested in a project or initiative, it should at least break even or recover the cost. To determine whether the project is in the positive zone, the costs and benefits are identified and discounted to present value to ascertain the viability.
2. **To provide a basis for comparing projects:** With so many investment choices around, there has to be a basis for choosing the best alternative. Cost-benefit analysis is one the aptest to tools to pick through the available options. When one out of the two options seems more beneficial, the choice is simple. However, a problem arises when there are more than two alternatives to evaluate. This model helps businesses to rank the projects according to their order of merit and go for the most viable one.
3. **Evaluating Opportunity Cost:** We know that the resources at our disposal are finite, but investment opportunities are many. Cost-benefit analysis is a useful tool for comparing and selecting the best option. However, while choosing the most viable project, it is also imperative to be aware of the Opportunity Cost or the

cost of the next best alternative foregone. It helps businesses to identify the benefits that could have arisen if the other option was chosen.

- 4. Performing sensitivity analysis for the various real-life scenarios:** Situations are not always the same, and the exact outcome cannot be predicted. The discount rate can be tested over a range. Sensitivity analysis can be instrumental in improving the credibility of a Cost-benefit analysis and is mainly used where there is ambiguity over the discount rate. The investigator may change the discount rate and the horizon value to test the sensitivity of the model.

### **Limitations of the Cost-Benefit Analysis**

For projects that involve small- to mid-level capital expenditures and are short to intermediate in terms of time to completion, an in-depth cost-benefit analysis may be sufficient enough to make a well-informed, rational decision. For very large projects with a long-term time horizon, a cost-benefit analysis might fail to account for important financial concerns such as inflation, interest rates, varying cash flows, and the present value of money.

Alternative capital budgeting analysis methods, including net present value (NPV), could be more appropriate for these situations. The concept of present value states that an amount of money or cash in the present day is worth more than receiving the amount in the future since today's money could be invested and earn income.

One of the benefits of using the net present value for deciding on a project is that it uses an alternative rate of return that could be earned if the project had never been done. That return is discounted from the results. In other words, the project needs to earn at least more than the rate of return that could be earned elsewhere or the discount rate. However, with any type of model used in performing a cost-benefit

analysis, there are a significant amount of forecasts built into the models. The forecasts used in any CBA might include future revenue or sales, alternative rates of return, expected costs, and expected future cash flows. If one or two of the forecasts are off, the CBA results would likely be thrown into question, thus highlighting the limitations in performing a cost-benefit analysis.

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## **7.6LET US SUM UP**

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Dear students at the end of this lesson you must be clear about what capital budgeting refers and how it helps in the 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.

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## 7.7 KEYWORDS

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- **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.

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## 7.8 SELF ASSESSMENT QUESTIONS

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Q1. Explain the various factors influencing investment decisions.

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Q2. Describe in detail NPV method.

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## 7.9 LESSON END EXERCISE

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Q1. Explain different methods of appraising project profitability. Which method is considered to be the best?

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Q2. Distinguish between Internal Rate of Return and Net Present Value techniques. Which method would you recommend for evaluating investment? Explain.

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Q3. 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.

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## 7.10 ANSWER KEY

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### Check Your Progress A

- c) Working capital management
- b) Long-term investment and returns
- b) Capital budgeting decision
- b) Estimated future cash flows
- b) Replacement decision

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## 7.11 SUGGESTED READINGS

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- Banerjee, B. (2015). *Fundamentals of financial management*. PHI Learning Pvt. Ltd.
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## **CAPITAL BUDGETING AND COST OF CAPITAL**

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**Lesson No. 8**

**Unit-II (Credit-1)**

**Semester-II**

**MCOMC252**

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### **COST OF CAPITAL- CONCEPT, IMPORTANCE, EXPLICIT COST AND IMPLICIT COST**

#### **STRUCTURE**

- 8.0 Learning Objectives and Outcomes
- 8.1 Introduction
- 8.2 Concept of Cost of Capital
- 8.3 Assumptions of Cost of Capital
- 8.4 Concept of Cost of Capital and its Implications in Capital Budgeting Decisions
- 8.5 Importance of Cost of Capital
- 8.6 Explicit and Implicit Cost of Capital
- 8.7 Let Us Sum Up
- 8.8 Keywords
- 8.9 Self-Assessment Questions
- 8.10 Lesson End Exercise
- 8.11 Answer key
- 8.12 Suggested Readings

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## **8.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- understand the concept of cost of capital
- apprehend importance of cost of capital and
- explain the types of cost of capital.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- comprehend the basic concepts of cost of capital
- understand the assumptions of cost of capital before implementing it and
- implement the different types of cost of capital in different situations.

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## **8.1 INTRODUCTION**

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Dear learners in this lesson you will understand the significance of cost of capital and the role it plays 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 acquiring 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 raising the fund. So the cost of capital may be viewed from two viewpoints - acquisition of funds and application of funds.

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## 8.2 CONCEPT OF COST OF CAPITAL

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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 to the concept of Cost of Capital:-

**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 earnings or the cut-off 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 cost 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.

According to the point of view of an investor, the cost of capital is the required rate of return an investment must provide in order to be worth undertaking. When an investment is made, the investor has to forego the return available on the next best alternative investment.

Thus, the cost of capital is also referred to as the discounting rate to determine the present value of the returns. It is used as the discount rate in the investment appraisal process while using techniques such as net present value and internal rate of return.

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## 8.3 ASSUMPTIONS OF COST OF CAPITAL

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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.  $K = r_f + b + f$ . Where,  $K$  = Cost of capital.  $r_f$  = The riskless cost of the particular type of finance,  $b$  = The business risk premium.  $f$  = The financial risk premium.

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#### **8.4 CONCEPT OF COST OF CAPITAL AND ITS IMPLICATIONS IN BUDGETING DECISIONS**

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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.

### **A. CHECK YOUR PROGRESS**

#### **Multiple Choice Questions**

**1. What does the "Cost of Capital" represent for a company?**

- A) The total cost of raw materials
- B) The return expected by investors for providing capital
- C) The total revenue earned by the company
- D) The amount spent on marketing campaigns

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**2. Which of the following is NOT a component of the cost of capital?**

- A) Cost of debt
- B) Cost of equity
- C) Cost of retained earnings
- D) Cost of fixed assets

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**3. The Weighted Average Cost of Capital (WACC) formula includes which of the following factors?**

- A) Cost of equity, cost of debt, and tax rate
- B) Cost of goods sold and operating expenses
- C) Depreciation and amortization
- D) Revenue and net income

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**4. If a company's debt increases while keeping other factors constant, what happens to its WACC?**

- A) Always increases
- B) Always decreases
- C) First decreases, then increases after a certain point
- D) Remains unchanged

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**5. The cost of retained earnings is generally considered equal to:**

- A) The cost of equity
- B) The cost of debt
- C) The cost of preference shares
- D) The risk-free rate

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## **8.5 IMPORTANCE OF COST OF CAPITAL**

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The cost of capital is very important concept in the financial decision making. Cost of capital is the measurement of the sacrifice made by investors in order to invest with a view to get a fair return in future on his investments as a reward for the postponement of his present needs. On the other hand, from the point of view of the firm using the capital, cost of capital is the price paid to the investor for the use of capital provided by him. Thus, cost of capital is the reward for the use of capital. The progressive management always likes to consider the importance of cost of capital while taking financial management decisions as it is very relevant in the following spheres:

1. **Designing the capital structure:** The cost of capital is the significant factor in designing a balanced and optimal capital structure of a firm. While designing it, the management has to consider the objective of maximizing the value of the firm and minimizing cost of capital. Comparing the various specific costs of different sources of capital, the financial manager can select the best and the most economical source of finance and can designed a sound and balanced capital structure.
2. **Capital budgeting decisions:** The cost of capital sources as a very useful tool in the process of making capital budgeting decisions. Acceptance or rejection of any investment proposal depends upon the cost of capital. A

proposal shall not be accepted till its rate of return is greater than the cost of capital. In various methods of discounted cash flows of capital budgeting, cost of capital measured the financial performance and determines acceptability of all investment proposals by discounting and the cash flows.



3. **Comparative study of sources of financing:** There are various sources of financing a project. Out of these, which source should be used at a particular point of time is to be decided by comparing cost of different sources of financing. The source which bears the minimum cost of capital would be selected. Although cost of capital is an important factor in such decisions, but equally important are the considerations of retaining control and of avoiding risks.
4. **Evaluations of financial performance:** Cost of capital can be used to evaluating the financial performance of the capital projects. Such as evaluations can be done by comparing actual profitability of the project undertaken with the actual cost of capital of funds raise to finance the project. If the actual profitability of the project is more than the actual cost of capital, the performance can be evaluated as satisfactory.
5. **Knowledge of firms expected income and inherent risks:** Investors can know the firms expected income and risks inherent there in by cost of capital. If a firms cost of capital is high, it means the firms present rate of earnings is less, risk is more and capital structure is imbalanced, in such situations, investors expect higher rate of return.
6. **Financing and Dividend Decisions:** The concept of capital can be conveniently employed as a tool in making other important financial decisions. On the basis, decisions can be taken regarding dividend policy, capitalization of profits and selections of sources of working capital.

In sum, the importance of cost of capital is that it is used to evaluate new project of company and allows the calculations to be easy so that it has minimum return that investor expect for providing investment to the company.

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## 8.6 EXPLICIT AND IMPLICIT COST OF CAPITAL

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Explicit costs are those costs that involve an actual payment to other parties. Therefore, an explicit cost is the monetary payment made by a firm for use of an input owned or controlled by others. Explicit costs are also referred to as accounting costs. For example, a firm pays Rs. 100 per day to a worker and engages 15 workers for 10 days, the explicit cost will be Rs. 15,000 incurred by the firm. Other

types of explicit costs include purchase of raw materials, renting a building, amount spent on advertising etc.

On the other hand, implicit costs represent the value of foregone opportunities but do not involve an actual cash payment. Implicit costs are just as important as explicit costs but are sometimes neglected because they are not as obvious. For example, a manager who runs his own business foregoes the salary that could have been earned working for someone else as we have seen in our earlier example. This implicit cost generally is not reflected in accounting statements, but rational decision-making requires that it be considered.

Therefore, an implicit cost is the opportunity cost of using resources that are owned or controlled by the owners of the firm. The implicit cost is the foregone return, the owner of the firm could have received had they used their own resources in their best alternative use rather than using the resources for their own firm's production.

### **Examples of explicit and implicit cost**

Imagine a student in college who is doing higher studies. How much does it cost to go to college for a year? The student could add up costs like tuition fees, college supplies, books, conveyance charges, and so on. These costs are examples of explicit costs since they require monetary payment. However, if compared to the value of the time that it takes for the student to attend his/her class and do homework, etc., explicit costs might appear very small. The implicit cost of attending college is the amount of money that the student could have earned if he or she had done a job rather than attending college. Thus, implicit costs do not require an immediate cash payment but signify the cost of an opportunity that you give up when you make a particular choice.

Another most important implicit cost is associated with the usage of a firm's capital. Suppose Mr. A invests a capital of \$1,00,000 inherited from his father to start a new business venture. The implicit cost of this capital is what Mr. A could have earned if he had taken the money and invested it elsewhere. If we assume that the rate of return on his best alternative investment opportunity is 12%, the implicit cost of capital is \$12,000.

The following are the main points of difference between the two types of costs:

<b>Basis</b>	<b>Explicit cost</b>	<b>Implicit cost</b>
Meaning	Explicit cost is the cost borne by a business for purchasing inputs.	Implicit cost is a cost related to the usage of self-owned inputs in business.
Notion	Explicit cost is based on the notion that “cash outflow means cost incurrence”.	Implicit cost is based on the notion that “had the inputs been diverted for some other purpose, they would have rendered some income”.
Cash outflow	An explicit cost arises when there is an exchange of money between a business and a third party.	There is no cash outflow in case of implicit costs.
Quantification	Explicit costs are easy to quantify as they involve an exchange of cash between two parties.	It is not easy to quantify implicit costs. Since there is no real exchange of money, they are difficult to assess. This also makes them subjective.
Recording in books	All explicit costs are recorded in the books of account to determine profit.	Though implicit costs are not separately recorded in financial statements, they are often considered by managers in making important cost-related decisions.
Alternatively known as	Another name for explicit cost is ‘out-of-pocket’ cost.	Implicit cost is also known as opportunity cost, implied cost, or economic cost.

Profit ascertainment	Explicit cost is used for ascertaining both accounting profit and economic profit. Accounting profit = Revenue – Cost of doing business (explicit)	Implicit cost aids in calculating only economic profit. Economic profit = Revenue – Cost of doing business – Opportunity cost (implicit)
Monetary	Explicit costs are clearly identifiable in monetary terms.	It is quite difficult to estimate implicit costs in monetary terms.

## B. CHECK YOUR PROGRESS

### Multiple Choice Questions

#### 1. Which of the following is a fixed cost?

- A) Raw material cost
- B) Wages paid per unit produced
- C) Rent of factory building
- D) Shipping cost per order

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#### 2. Variable costs change with:

- A) Time
- B) Output level
- C) Advertising expenses
- D) None of the above

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#### 3. Which of the following is an example of a direct cost?

- A) Office rent
  - B) Supervisor's salary
  - C) Raw materials used in production
  - D) Electricity bill for the office
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**4. Indirect costs are also known as:**

- A) Fixed costs
- B) Overhead costs
- C) Prime costs
- D) Variable costs

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**5. The cost that has already been incurred and cannot be recovered is called:**

- A) Opportunity cost
- B) Marginal cost
- C) Sunk cost
- D) Implicit cost

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**6. Which of the following best describes opportunity cost?**

- A) The cost of hiring new employees
- B) The benefit foregone when choosing one alternative over another
- C) The total expenses incurred in a business
- D) The cost of producing one extra unit

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**7. Which type of cost is incurred when a company decides to expand its production by one additional unit?**

- A) Sunk cost
- B) Marginal cost
- C) Fixed cost
- D) Direct cost

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**8. Which of the following is NOT a type of cost classification?**

- A) Fixed and Variable Costs
- B) Direct and Indirect Costs
- C) Accounting and Psychological Costs
- D) Economic and Capital Costs

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## 8.7 LET US SUM UP

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Dear learners 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.

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## 8.8 KEYWORDS

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- **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 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.

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## 8.9 SELFASSESSMENT QUESTIONS

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Q1. What is meant by cost of capital?

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Q2. Name any two types of cost of capital.

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Q3. Cost of capital is important for a firm. Explain how?

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### 8.10 LESSON END EXERCISE

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Q1. What are implications of cost of capital in capital budgeting decisions?

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Q2. Explain assumptions of cost of capital.

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### 8.11 ANSWER KEY

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#### Check Your Progress A

- B) The return expected by investors for providing capital
- D) Cost of fixed assets

- A) Cost of equity, cost of debt, and tax rate
- C) First decreases, then increases after a certain point
- A) The cost of equity

### **Check Your Progress B**

- C) Rent of factory building
- B) Output level
- C) Raw materials used in production
- B) Overhead costs
- C) Sunk cost
- B) The benefit foregone when choosing one alternative over another
- B) Marginal cost
- C) Accounting and Psychological Costs

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## **8.12 SUGGESTED READINGS**

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## **CAPITAL BUDGETING AND COST OF CAPITAL**

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**Lesson No. 9**

**Unit-II (Credit-1)**

**Semester-II**

**MCOMCC252**

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### **MEASUREMENT OF SPECIFIC COST OF CAPITAL - COST OF EQUITY SHARE CAPITAL**

#### **STRUCTURE**

9.0 Learning Objectives and Outcomes

9.1 Introduction

9.2 Measurement of Specific Cost of Capital - Cost of Equity

9.3 Let Us Sum Up

9.4 Keywords

9.5 Self-Assessment Questions

9.6 Lesson End Exercise

9.7 Answer Key

9.8 Suggested Readings

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## **9.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- apprehend importance of specific cost of capital and
- understand how to measure the specific of cost of capital.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- understand the basics of specific cost of capital and
- measure the specific cost of capital in different situations.

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## **9.1 INTRODUCTION**

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Dear students in this lesson you will be to learn about the cost of capital which is an important financial concept. It links the company's long term decisions with the wealth of the shareholders as determined in the market place. Whenever, a business organization raises funds, it has to keep in mind its cost. Hence computation of cost of capital is very important and finance managers must have a close look on it. 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. Cost of equity share is the part of cost of capital which allows the payment to only the equity shareholders. Here, every shareholders get the shares for getting the return on the shares on which they are investing so much. From company's perspective the company must earn more than cost of equity capital in order to be unaffected by the market value of the shares of its. Therefore, the equity shareholders' required rate of return would

be the same whether they supply funds by purchasing new shares or by foregoing dividends, which could have been distributed to them.

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## **9.2 MEASUREMENT OF SPECIFIC COST OF CAPITAL- COST OF EQUITY**

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Unlike debt and money market instruments, equity instruments represent the ownership interest in the company. As owners must put in their money in the venture before anybody would lend to them, equity is always issued before debt is released by the institutions. In fact, the incorporation of the company requires that the promoters must pick up some shares in the company, only then the company can be incorporated. As equity represents the owners it is but logical that all the debt holders must be paid off before owners can claim any returns from the company. So, the equity has the lowest priority claim on earnings. Equity also has the last claim on the assets in case the company is liquidated (closed down).

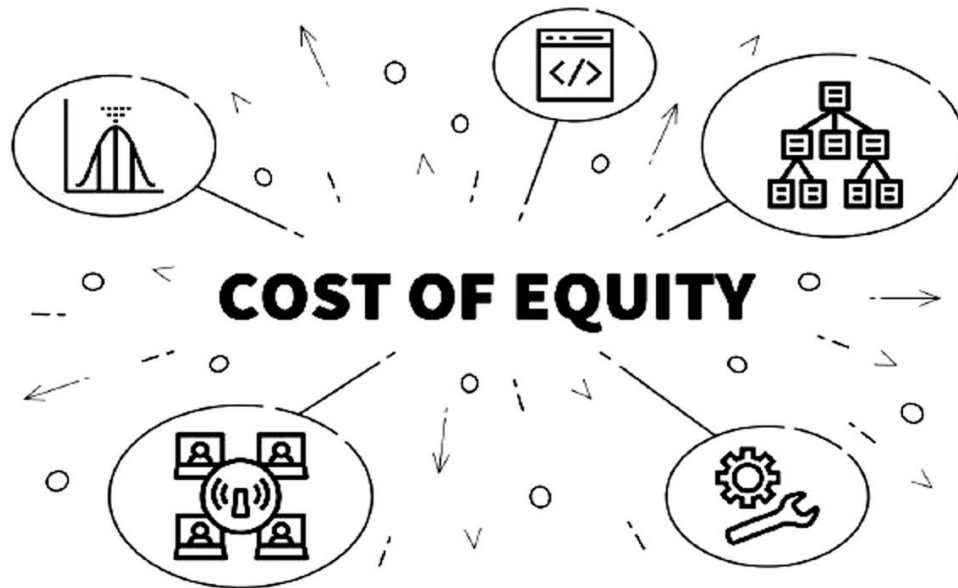
This means that the equity carries the highest risk. The flip side of the coin is that the equity owners are also the owners of all the profits that remain after all the debt holders are paid their interest. The interest payment is fixed while there is no limit on the levels of profits that can accrue to the equity holders. The liability of the equity holders is limited to the level of investments that they have put in into the company and not unlimited.

Unlimited profit sharing means that equity shares have an unlimited potential for dividend payments and price appreciation. That is why investing in equity is so exciting and full of opportunities. At the same time the risk is also high because there is nothing fixed about earnings which can fluctuate widely depending upon the business environment. This is also the reason why this book will devote much more time to equity than on debt. Shareholders, being the owners of the company, elect the board of directors and vote on major issues that affect the functioning and long term plans of the company. Major shareholders take up seats on the board of directors and influence the decisions that are taken. Small shareholders cannot exercise the same level of control so when they do not like the way the company is being run they simply sell their shares and invest their money somewhere else.

The piece of paper which testifies the ownership position of the shareholder in a company is called a share certificate. The number of shares, their par value, the certificate number, distinctive numbers, the date of issue and the owner's name are mentioned on the share certificate.

### **Concept of cost of equity**

The cost of equity is the return that a company requires to decide if an investment meets capital return requirements. Firms often use it as a capital budgeting threshold for the required rate of return. A firm's cost of equity represents the compensation that the market demands in exchange for owning the asset and bearing the risk of ownership.



“Cost of equity capital is the cost of the estimated stream of net capital outlays desired from equity sources” **E.W. Walker.**

**James C. Van Horne** defines the cost of equity capital can be thought of as the rate of discount that equates the present value of all expected future dividends per share, as perceived by investors.

The cost of equity capital is the most difficult to measure. A few problems in this regard are as follows :

- i) The cost of equity is not the out of pocket cost of using equity capital.
- i) The cost of equity is based upon the stream of future dividends as expected by shareholders (very difficult to estimate).
- i) The relationship between market price with earnings is known. Dividends also affect the market value (which one is to be considered).

### **Is Equity Capital Free of Cost?**

Sometimes it is argued that the equity capital is free of cost. The reason for such argument is that it is not legally binding for firms to pay dividends to ordinary shareholders.

Further, unlike the interest rate or preference dividend rate, the equity dividend rate is not fixed. It is fallacious to assume equity capital to be free of cost. As we have discussed earlier, equity capital involves an opportunity cost; ordinary shareholders supply funds to the firm in the expectation of dividends and capital gains commensurate with their risk of investment. The market value of the shares determined by the demand and supply forces in a well functioning capital market reflects the return required by ordinary shareholders. Thus, the shareholders' required rate of return, which equates the present value of the expected dividends with the market value of the share, is the cost of equity. The cost of external equity would, however, be more than the shareholders' required rate of return if the issue price were different from the market price of the share.

### **Terms Associated with Equity Securities**

Let us look at some of key terms that are associated with equity shares:

**a) Stock**

Ownership of a company represented by shares that are a claim on the company's earnings and assets.

**b) Share**

Unit of equity ownership in a company or in a mutual fund. This ownership is represented by a share certificate, which names the company and the shareholder.

**c) Face value/ Par value**

The value of one share as given on the share certificate of the company. The face value today can be either Rs.10 or below that number (but in multiples of Rs. 1) as specified by the Securities Law governing public limited companies. You will find many companies with a face value of less than Rs. 10, for example Rs. 5 (E.g Infosys Technologies, Maruti Udyog), Rs. 4 (iGate Global Solutions), Rs.2 (Satyam Computers) and even Rs.1 (e.g. Tata Consultancy Services, Hindustan Lever). Earlier Rs 100 and Rs 50 were the typical face values and you will still find shares with these face values, e.g. Dawn Mills has Rs 50 face value and Shri Dinesh Mills has Rs 100 face value per share.

The face value is the amount on which the dividend is calculated. Thus, a 15 per cent dividend on a share with a face value of Rs.10 will pay the share holder Rs.1.5 per share. This means that any dividend percentage has different meaning in Rupee terms as the face value changes. For example 100% dividend on 1 share of Rs 100 face value will get you



Rs 100 but the same dividend percentage on 1 share of Rs 1 face value would get you only Rs 1.

**d) Authorised share capital**

Number of shares of stock provided for in the Articles of Association of a company is the authorized share capital. This figure is usually indicated in the Share Capital section of the Balance Sheet.

**e) Paid-up share capital**

Paid-up share capital is the capital that has been issued and subscribed by the shareholders. Authorised capital is usually well in excess of the paid-up capital and accompany cannot legally issue more shares than authorized. The number of authorized shares can be changed only by amendment to the Articles of Association for which a special resolution needs to be passed in the Annual General Meeting.

**f) Issued share capital:**

Capital is that portion of the authorised capital that has been actually offered for subscription. Subscribed share capital is that portion of issued share capital, which has actually been subscribed and allotted. Paid-up share capital is that part of the subscribed capital for which consideration in cash or otherwise has been received. Therefore, subscribed share capital can be less than or equal to the issued share capital. Similarly paid-up share capital can be less than or equal to subscribed share capital. All these types of share capital also include the bonus shares that have been allotted by the organisation.

**g) Called-up share capital**

It refers to that part of the subscribed capital, which shareholders have been required or demanded to pay but have not paid as yet. This comes in the case where the company has issued partly paid up shares and some shareholders have not paid the entire amount to make the shares fully paid up.

**h) Book value**

The book value is calculated by adding reserves to the equity capital of the company, multiplied by the face value and divided by the equity capital of the company. Book value tells us how much each share is worth in the books of the company. So, if a company has a face value of Rs.10, equity capital of Rs.10 crores and reserves of Rs.20 crores, then the book value of each Rs.10 share will be:

$$\text{Book Value} = \frac{\text{Rs } 10 \text{ cr} + \text{Rs } 20}{\text{Rs } 10 \text{ cr}} \times \text{Rs. } 10$$

The true worth of the share could be very different from the book value so calculated even when we are not taking the market price into consideration. Why this is so we will see later. Book and market values will usually be equal on the day the shares in a new corporation are issued, but after that only coincidence will ever make them equal at any given moment.

**(i) Earnings per share (EPS)**

EPS can be defined as the company's profit allocated to each outstanding equity share. For instance, a company that earned Rs.10 crore last year and has 1 crore shares outstanding (with a face value of Rs.10 each) will report a EPS of

$$\text{EPS} = \frac{\text{Rs. } 10 \text{ cr}}{\text{Rs. } 1 \text{ cr}} \text{ Rs } 10$$

The profits that are used to calculate EPS are the profits that are left after paying interest to debt holders, taxes and dividend on preference shares. EPS is considered to be a key figure (and also misleading) in evaluating a share's outlook.

**(j) Stock Price Quotations**

If you pick up any of the major newspapers (financial or non-financial), they carry atleast some of the quotations of the last day's trading on the major stock exchanges, be it National Stock Exchange (NSE), Bombay Stock Exchange (BSE), or any other stock exchange.

The usual format in a financial newspaper is to carry four prices (open, high, low, close) along with volumes of shares traded and number of trades. Price/ Earning Ratio (P/E) and market capitalization is also carried. They also carry the closing share price of the previous trading day in a bracket before starting with yesterday's prices as also carry the previous 52 week (one year) high/low prices for that share. The prices mentioned are for one share of the company.

**COMPUTATION OF COST OF EQUITY OR ORDINARY SHARES**

The funds required for a project may be raised by the issue of equity shares which are of permanent nature. These funds need not be repayable during the lifetime of the organisation. Calculation of the cost of equity shares is complicated because, unlike debt and preference shares, there is no fixed rate of interest or dividend payment.

Cost of equity share is calculated by considering the earnings of the company, market value of the shares, dividend per share and the growth rate of dividend or earnings.

**(i) Dividend/Price Ratio Method:**

An investor buys equity shares of a particular company as he expects a certain return (i.e. dividend). The expected rate of dividend per share on the current market price per share is the cost of equity share capital. Thus, the cost of equity share capital is computed on the basis of the present value of the expected future stream of dividends.

**Thus, the cost of equity share capital ( $K_e$ ) is measured by:**

$K_e$  = where  $D$  = Dividend per share

$P$  = Current market price per share.

If 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 1**

If there is a company which issues shares of Rs. 200 each at a premium of 10%. The company pays 20% dividend to equity shareholders for the past five years and expects to maintain the same in the future also. Compute the cost of equity capital. Will it be different if market price of equity share is Rs. 260?

**Solution:**

Cost of equity shares = Dividend per equity / Market price

$$= 20 \times 100 / 210$$

$$= 9.52\%$$

If the market price of equity share is Rs. 260.

$$= 20 \times 100 / 260 = 7.69\%$$

**Example 2:**

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 ( $K_e$ ) =  $\frac{D}{P} + g$ .

$$(i) K_e = \frac{\text{Rs. } 3}{\text{Rs. } 60} + 0.10 = 0.05 + 0.10 = 0.15 \text{ or } 15\%$$

$$(ii) \text{ Market Price (P)} = \frac{\text{Dividend (D)}}{\text{Cost of equity capital (K}_e\text{)} - \text{Growth rate (g)}}$$

$$= \frac{\text{Rs. } 3}{15\% - 12\%} = \frac{\text{Rs. } 3}{3\%} = \text{Rs. } 100.$$

$$(iii) \text{ Market Price (P)} = \frac{\text{Rs. } 3}{12\% - 10\%} = \frac{\text{Rs. } 3}{2\%} = \text{Rs. } 150.$$

**Example 3:**

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 ( $K_e$ ) =  $D/P + g$

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

$$K = \text{Rs } 4.75 / \text{Rs. } 100 + 6\% = 0.0475 + 0.06 = 0.1075 \text{ or } 10.75\%.$$

(ii) Cost of new Equity Capital =  $\text{Rs. } 4.75 / \text{Rs. } 95 + 6\% = 0.11 \text{ or, } 11\%.$

**Example 4:**

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 ( $K_e$ ) =  $D/P + g$  = Rs. 2/Rs. 20 + 5% = 15%

(b)  $K_e = D/P + g$

or,  $0.15 = \text{Rs. } 2 / P + 0.07$  or,  $P = 2/0.08 = \text{Rs. } 25$ .

**ii) Dividend yield plus growth in dividend method**

It is based on the theory that company is growing and its shares market value is also on growth. So, because of this shareholders are in need of simple dividend, so that company can provide the profit to them according to the growth.

To calculate this formula is as follows:-

Cost of equity share = Dividend per equity/Market Price + Rate of growth in dividends

**iii) Earning yield method**

In this cost of equity capital is minimum and the earning of the company should be considered on market price of share.

The formula for this is as follows:

Cost of equity share = Earnings per share / Market Price per share

**iv) Realised yield method**

This method removes the drawback which in the dividend yield method or earning yield method as both are based on future estimation of dividend or earning. In the economics

there are many factors which can't be controlled and are very uncertain and if the risk is involved then the future planning can't be used and the decision related estimation return on investment can't be considered. It is based on actual earning which is earned on the amount of investment. The equity share capital is calculated as:-

Cost of equity share = Actual earnings per share \* 100

**(v) Earnings/Price Ratio Method:**

Earnings per share (EPS) are the amount of earning per each share of a company's stock. Companies require the EPS for their each income statement which shows about the continuing operations, discontinued operations, net income and outstanding items. EPS doesn't depend on the increase or decrease of the earning power of the company and gets calculated over number of years.

This method takes into consideration the earnings per share (EPS) and the market price of share. Thus, the cost of equity share capital will be based upon the expected rate of earnings of a company. The argument is that each investor expects a certain amount of earnings whether distributed or not, from the company in whose shares he invests.

If the earnings are not distributed 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.

**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 ( $K_e$ ) 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 commission 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:**

$$K_e = E / P (1 - f) + g$$

To illustrate, if the current market price of a share is Rs. 500 (face value being Rs 100) and the earning per share is Rs. 10, the E/P ratio will be: Rs 10 / Rs. 500 = 0.02 or 2 per cent. Does this mean that the expectation of shareholders is 2 per cent? They would, in fact, expect to receive a stream of dividends and a final price of the share that would result in a return significantly greater than the E/P ratio. Thus, the dividend valuation model gives the most of valid measure of the cost of equity.

#### **Example 6:**

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 :**

$$\text{We know, Cost of Equity Capital} = \frac{E}{P}$$

$$E = \text{Earnings per share} = \frac{\text{Rs. } 60,000}{10,000} = \text{Rs. } 6.$$

$$P = \text{Current market price} = \text{Rs. } 40.$$

$$\text{Cost of Equity Capital } (K_e) = \frac{\text{Rs. } 6}{\text{Rs. } 40} = 0.15\% \text{ or } 15\%.$$

#### **Example 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.

$$\begin{aligned} K_e &= \frac{E}{P(1-f)} & \text{where } E &= \text{Rs. 7.25} \\ &= \frac{7.25}{40(1-0.05)} & P &= \text{Rs. 40} \\ &= \frac{7.25}{38} = 0.1907 \text{ or } 19.07\% & f &= 5\% = .05 \end{aligned}$$

### **Example 7**

A firm is currently earning Rs. 100,000 and its share is selling at a market price of Rs.80. The firm has 10,000 shares outstanding and has no debt. The earnings of the firm are expected to remain stable, and it has a payout ratio of 100 per cent. What is the cost of equity? If the firm's payout ratio is assumed to be 60 per cent and that it earns 15 per cent rate of return on its investment opportunities, then, what would be the firm's cost of equity?

**Solution:**

In the first case since expected growth rate is zero, we can use expected earnings-price ratio to compute the cost of equity. Thus:

$$K_e = \text{Rs}10/80 = 0.125 \text{ or } 12.5\%$$

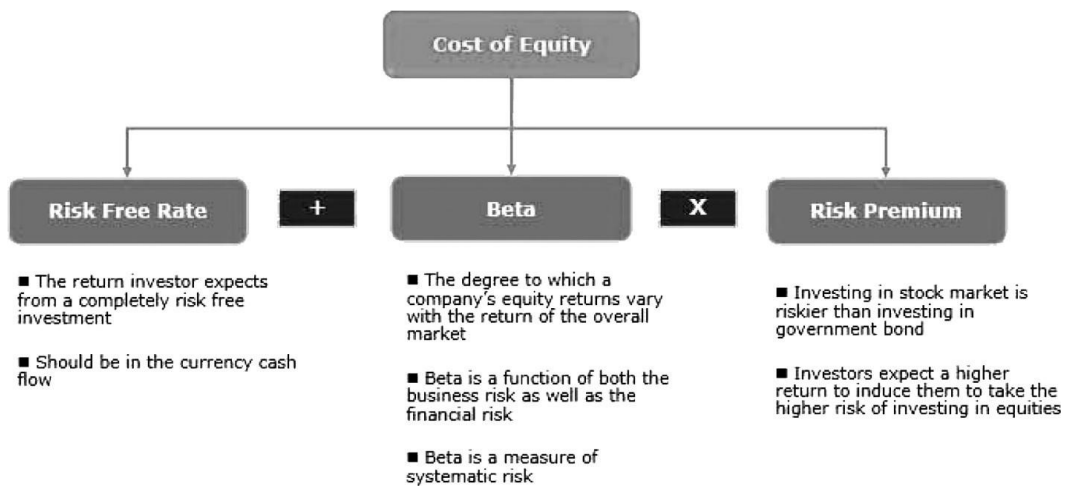
The earnings per share are Rs. 100,000 / 10,000 = Rs. 10. If the firm pays out 60 percent of its earnings, the dividends per share will be: Rs. 10 x 0.6 = Rs. 6, and the retention ratio will be 40 per cent. If the expected return on internal investment opportunities is 15 per cent, then the firm's expected growth is: 0.40 x 0.15 = 0.06 or 6 per cent. The firm's cost of equity will be:

$$K_e = \text{Rs}6/80 + 0.06 = 0.135 = 13.5\%$$



vi) **Capital asset pricing model (CAPM)**

CAPM 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 value 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 ( $\beta$ ) 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.

### **A. CHECK YOUR PROGRESS**

#### **Practical Based Questions**

##### **Example 1:**

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.

##### **Example 2:**

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.

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### **9.3 LET US SUM UP**

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Cost of Equity is the rate of return a company pays out to equity investors. A firm uses cost of equity to assess the relative attractiveness of investments, including both internal projects and external acquisition opportunities. Companies typically use a combination of equity and debt financing, with equity capital being more expensive. Calculation of cost of

equity (K) poses a host of problems. It is the most difficult and controversial cost to measure because there is no common basis for computation. For example, calculation of cost of debt (K) is based on interest rate, preference dividend is the basic for calculation of cost of preference shares (K). Interest on debt and dividend on preference shares is fixed in terms of the stipulations following the issue of such debentures and preference shares, respectively. In contrast, the return on equity shareholders solely depends on the discretion of the company management. Apart from this there is no stipulation for payment of dividend to equity shareholders. They are ranked at the bottom as claimants on the assets of the company at the time of liquidation. All these show that equity capital does not carry any cost. But this is not true, equity capital has some cost. The cost of equity capital (K<sub>e</sub>), may be defined as the minimum rate of return that a firm must earn on the equity financed portions of an investment project in order to leave unchanged the market price of the shares. The cost of equity is not the out-of-pocket cost of using equity capital as the equity shareholders are not paid dividend at a fixed rate every year. The cost of equity can be calculated by using the CAPM (Capital Asset Pricing Model) or Dividend Capitalization Model (for companies that pay out dividends).

The capital asset pricing model (CAPM) represents a tool for interconnection analysis between risk and yield. The basic idea of this model is the identification of expected yield/cost of specific investment through a corresponding risk-free rate of investment, market risk premium, and measure of systemic risk. The cost of capital is the rate that company needs to pay, either explicitly or implicitly, to investors for their capital or the minimum rate of return (yield) required by supplier of capital. The basic goal of this paper is to present the possibilities of applying this model to determine the cost of capital for the company whose shares are quoted on the Sarajevo Stock Exchange (SASE).

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#### 9.4 KEYWORDS

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- **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 capital structure. 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.

- **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 capital:** Is reward for use of capital. It is price paid to the investors for the use of capital provided by them. It is investors required rate of return.

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### 9.5 SELF ASSESSMENT QUESTIONS

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Q1. What is meant by cost of equity capital? Illustrate with an example.

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Q2. What is the difference between share and stock?

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Q3. Explain the various terms used in cost of equity.

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## 9.6 LESSON END EXERCISE

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Q1. Is equity capital free of cost?

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Q2. Explain CAPM.

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## 9.7 ANSWER KEY

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### Check Your Progress A

**Solution:**

$$D_0 (1 + g) / P_0 + g = 1.80 (1 + .06) / 28 + 0.06$$

$$= 0.0681 + 0.06 = 12.81\%$$

**Solution :**

We know, Cost of Equity Capital =  $\frac{E}{P}$

$$E = \text{Earnings per share} = \frac{\text{Rs. } 60,000}{10,000} = \text{Rs. } 6.$$

$$P = \text{Current market price} = \text{Rs. } 40.$$

$$\text{Cost of Equity Capital (K}_e\text{)} = \frac{\text{Rs. } 6}{\text{Rs. } 40} = 0.15\% \text{ or } 15\%.$$



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## **CAPITAL BUDGETING AND COST OF CAPITAL**

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**Lesson No. 10**

**Unit-II (Credit-1)**

**Semester-II**

**MCOMC252**

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### **MEASUREMENT OF SPECIFIC COST OF CAPITAL - COST OF DEBT, COST OF PREFERENCE SHARE CAPITAL AND COST OF RETAINED EARNINGS; OVER- ALL COST OF CAPITAL**

#### **STRUCTURE**

10.0 Learning Objectives and Outcomes

10.1 Introduction

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## **10.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- understand specific costs of capital
- measure cost of debt
- calculate cost of preference shares, retained earnings and
- apprehend importance of specific cost of capital.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- understand how to measure the specific of cost of capital and
- differentiate between cost of capital and cost of equity.

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## **10.1 INTRODUCTION**

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Dear students in this lesson you will understand the relevance of different cost of capital in deciding the firm's capital structure. It is one of the bases of the theories of financial management. 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.

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## **10.2 MEASUREMENT OF SPECIFIC COST OF CAPITAL - COST OF DEBT, COST OF PREFERENCE SHARE CAPITAL AND COST OF RETAINED EARNINGS; OVERALL COST OF CAPITAL**

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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:**

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

$I$  = Fixed interest rate

$$t = \text{Tax rate}$$

$$NP = \text{Net Proceeds}$$

**(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 than 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:

$$K_d = I/NP (1 - t)$$

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:**

$$K_d = \frac{I(1-t) + \frac{1}{N}(RV - NP)}{\frac{1}{2}(RV + NP)}$$

Where,

$K_d$  = Cost of debenture

$I$  = Annual interest payment

$t$  = Tax rate

$NP$  = Net proceeds from the issue of debentures

$RV$  = 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 :  $K_d = \frac{\text{Rs. } 15,000}{\text{Rs. } 1,00,000}(1 - 0.4) = 0.09 \text{ or } 9\%$ .

(ii) Issued at discount of 10%

$$K_d = \frac{\text{Rs. } 15,000}{\text{Rs. } 90,000}(1 - 0.4) = 0.10 \text{ or } 10\%$$

(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

$$K_d = \frac{\text{Rs. } 15,000}{\text{Rs. } 95,000 \text{ (i.e., Rs. } 1,00,000 - \text{Rs. } 5,000)}(1 - 0.4) = 0.0947 \text{ or } 9.47\%$$

### 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 :**

$$\text{We know, Cost of Debenture } K_d = \frac{I(1-t) + \frac{1}{n}(R-P)}{\frac{1}{2}(R+P)}$$

Here,  $I = \text{Rs. } 12$ ,  $t = 50\%$  or  $0.50$ ,  $P = \text{Rs. } 100 - 5 = \text{Rs. } 95$ ,  $n = 10$  years.

$R = \text{Rs. } 100 + 10\% \text{ of Rs. } 100 = \text{Rs. } 110$ .

$$K_d = \frac{12(1-0.5) + \frac{1}{10}(110-95)}{\frac{1}{2}(110+95)} = \frac{6+1.5}{102.5} = 0.073 = 7.3\%.$$



## **B. Cost of preference share capital:**

As compared to debentures, 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 preference 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:

$$(K_P) = DP / NP$$

Where,

$K_P$  = Cost of preference Capital

DP = 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.

$$K_P = \frac{D_P + \frac{1}{n}(R_V - NP)}{\frac{1}{2}(R_V + NP)}$$

where,

K<sub>p</sub> = Cost of preference Capital

NP = Net proceeds from the issue of preference shares

RV = Net amount required for redemption of preference shares

DP = 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

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?

$$\text{We know, cost of preference share (K}_p\text{)} = \frac{D_p + \frac{1}{n}(R - P)}{\frac{1}{2} \times (R + P)}$$

Here, D<sub>p</sub> = 12% of Rs. 100 = Rs. 12, R = Rs. 110 (at 10% premium)  
P = Rs. 100 (at par), n = 10 years.

$$K_p = \frac{\text{Rs. } 12 + \frac{1}{10}(\text{Rs. } 110 - \text{Rs. } 100)}{\frac{1}{2} \times \text{Rs. } (110 + 100)} = \frac{\text{Rs. } 12 + \text{Rs. } 1}{\text{Rs. } 105} = \frac{\text{Rs. } 13}{\text{Rs. } 105} = 0.1238 = 12.38\%$$

### Example 10.4

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<sub>P</sub> (Cost of preference share) to the company?

$$K_P = \frac{D_P + \frac{1}{n}(R_V - NP)}{\frac{1}{2}(R_V + NP)}$$

Here,  $D_P = 12\%$  of Rs. 100 = Rs. 12,  $R_V = \text{Rs. 110 (at a 10\% premium)}$

$N_P = \text{Rs. 100} + 5\% \text{ of Rs. 100} - \text{Rs. 2} = \text{Rs. 103}$ ,  $n = 15 \text{ years}$

$$K_P = \frac{\text{Rs. 12} + \frac{1}{15}(110 - 103)}{\frac{1}{2}(110 + 103)} = \frac{\text{Rs. (12 + 0.467)}}{\text{Rs. 106.50}} = 11.706\%$$

### 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 is 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,  $K_r = K_e = D/P + g$ .

#### **Example 10.5:**

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**

$$\begin{aligned} K_r &= K_e (1 - t) (1 - f) & \text{Here } K_e &= 20\% = 0.20 \\ \text{or } K_r &= 0.20(1 - 0.30)(1 - 0.02) & t &= 30\% = 0.30 \\ &= 0.1372 \text{ or, } 13.72\%. & f &= 2\% = 0.02. \end{aligned}$$

#### **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. While taking financial decisions, the weighted or 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 enhancement 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 EB/B, where EB 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:

$$WACC = K_o = K_r \frac{E_M}{M} + K_r \frac{R_M}{M} + K_p \frac{P_M}{M} + K_d \frac{D_M}{M}$$

Where, KO = Overall cost of capital,

Ke = Cost of equity.

EB = Book value of equity capital.

B = Total book value of all the sources of capital, Kr = Cost of retained earnings,

RB = Book value of retained earnings,

Kp = Cost of preference shares,

PB = Book value of preference shares,

Kd = Cost of debt, and

DB = 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 specific 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. For example, the weight for equity will be  $EM/M$  where  $EM$  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 (WACC) using market value weight may be calculated as:

$$WACC = K_o = K_e \frac{EM}{M} + K_r \frac{RM}{M} + K_P \frac{PM}{M} + K_d \frac{DM}{m}$$

Where,  $K_o$  = Overall cost of capital,

$K_e$  = Cost of equity,

$EM$  = Market value of equity capital,

$M$  = Total market value of all the sources of capital,

$K_r$  = Cost of retained earnings.

$RM$  = Market value of retained earnings,

$K_P$  = Cost of preference shares,

$PM$  = Market value of preference shares,

$K_d$  = Cost of debt, and

$DM$  = Market value of debt.

**Example 10.6:**

Jamuna Ltd has the following capital structure and, after tax, costs for the different sources of fund used:

Source	Amount (Rs.)	After-tax Cost
Equity share capital	6,00,000	13%
Preference share capital	3,00,000	8%
Debentures	2,40,000	5%
Retained earnings	60,000	9%

You are required to calculate the Weighted Average Cost of Capital.

**Solution :**

**Computation of Weighted Average Cost of Capital**

Source (1)	Amount Rs. (2)	Proportion (3)	After-tax Cost (4)	Weighted Cost (5) = (3) × (4)
Equity share capital	6,00,000	0.50	0.13	0.065
Preference share capital	3,00,000	0.25	0.08	0.02
Debentures	2,40,000	0.20	0.05	0.01
Retained earnings	60,000	0.05	0.09	0.0045
	12,00,000	1.00		0.0995

∴ Weighted Average Cost of Capital ( $K_w$ ) =  $0.0995 \times 100 = 9.95\%$ .

### Example 10.7

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 ( $K_e$ ) =  $\frac{EPS}{P} = \frac{\text{Rs. } 15}{\text{Rs. } 120} = 0.125$  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 (1)	Amount (Rs.) (2)	Proportion (3)	After-tax Cost (4)	Weighted Cost (5) = (3) × (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		0.097

∴ Weighted Average Cost of Capital ( $K_w$ ) =  $0.097 \times 100 = 9.7\%$ .

### Example 10.8:

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 ( $K_e$ ) =  $\frac{D}{P} + g = \frac{\text{Rs. } 5}{\text{Rs. } 50} + 10\% = 20\%$

**Statement Showing Weighted Average Cost of Capital**

Source (1)	Amount (Rs.) (2)	Proportion (3)	After-tax Cost (4)	Weighted Cost (5) = (3) × (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 ( $K_w$ ) =  $0.1375 \times 100 = 13.75\%$

### Example 10.9

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.

## A. CHECK YOUR PROGRESS

### Practical Based Questions

A company issues 5,000 12% debentures of Rs 100 each at a discount of 5%. The commission payable to brokers is Rs 25,000. The debentures are redeemable after 5 years. Compute the after tax cost of debt assuming a tax rate of 50%.

2. Calculate the WACC from the following information;

Type of Capital	Proportion in new capital structure	After Tax Cost
Debt	20	9
Preference Shares	25	10
Equity Shares	25	10
Retained Earnings	30	11
Total	100	

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### 10.3 CLASSIFICATION OF COST OF CAPITAL AND ITS MEASUREMENT

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The following are the various types of cost of capital:

1. **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, IO = Net funds received by the

firm at time 0; C1 = 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  $I_0$  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.

2.           **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.

3.           **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%.

4. **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:

1. It refers to the measurement of cost of each specific source of capital;
2. It also requires the assignment of proper weights to each component of capital;
3. 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 10.9**

A firm presents the following information relating to cost of capital:

<b>Sources</b>	<b>Amount Rs.</b>	<b>After Cost of Capital</b>
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.  $10\% - 50\% \text{ of } 10\%$ ). 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. 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 maintaining 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 10.10**

In example 10.9 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 :**

<b>Sources</b>	<b>Amount Rs.</b>	<b>Proportion Tax (%)</b>	<b>Specific Cost after Tax (%)</b>	<b>Marginal Cost (%)</b>
Equity	12,500	0.5	12	6.0
Debt	12,500	0.5	4	2.0
		<u>1.0</u>		<u>8.0</u>

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:

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#### **10.4 DIFFERENCE BETWEEN COST OF CAPITAL AND COST OF EQUITY**

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##### **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 suppliers. 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 increases 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.

**B. CHECK YOUR PROGRESS****Case Study**

A firm is evaluating a new project and needs to determine which discount rate to use. Should they apply their Weighted Average Cost of Capital (WACC), or should they consider the project's specific cost of equity or debt?

- **Key considerations:**
  - Is the project similar in risk profile to the company's existing operations?
  - Is the project financed in the same proportion as the company's overall capital structure?
  - Will the project be stand-alone or part of the core business?

## **2. How does a company estimate the cost of equity for an unlisted or new business venture?**

### **Practical Context:**

An entrepreneur is launching a startup or a private firm is seeking external funding, but there is no market data like beta or stock price available to apply the CAPM model.

- **Key considerations:**

- Can they use a comparable listed firm to estimate beta?
- Should they add a startup or size premium to account for additional risk?
- What role do investor expectations and market conditions play?

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## **10.5 LET US SUM UP**

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At the end of this lesson you must have understood that 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 part of them in the form of dividends and the rest will be retained within the firms. Since no dividend is required to be 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 new share, in addition to the old shares. Thus, the present wealth of the shareholders in both the cases remains the same.

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## 10.6 KEYWORDS

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- **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 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.

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## 10.7 SELF ASSESSMENT QUESTIONS

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Q1. What is meant by weighted average cost of capital? Illustrate with an example.

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Q2. What is the difference between book value and market value?

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Q3. Differentiate between cost of capital and cost of equity.

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### **10.8 LESSON END EXERCISE**

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Q1. What is marginal cost of capital?

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Q2. Explain cost of borrowing.

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## 10.9 SUGGESTED READINGS

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## **LEVERAGES AND CAPITAL STRUCTURE**

**Lesson No. 11**

**Unit-III (Credit-1)**

**Semester-II**

**MCOMCC252**

### **LEVERAGE - CONCEPT, TYPES AND APPLICATION OF LEVERAGE STRUCTURE**

- 11.0 Learning Objectives and Outcomes
- 11.1 Introduction
- 11.2 Concept of Leverage
- 11.3 Types of leverage
  - 11.3.1 Operating leverage
  - 11.3.2 Financial leverage
  - 11.3.3 Combined leverage
- 11.4 Difference between operating leverage and financial leverage
- 11.5 Working capital leverage
- 11.6 Effects of leverage on shareholder's return
- 11.7 Applications of Leverage
- 11.8 Let Us Sum Up
- 11.9 Keywords
- 11.10 Self-Assessment Questions
- 11.11 Lesson End Exercise
- 11.12 Answer Key
- 11.13 Suggested Readings

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## **11.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- understand concept of leverage
- calculate operating, financial and combined leverage and
- differentiate between types of leverages.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- understand how to calculate the leverage
- apprehend the effects of leverage and

differentiate between types of leverages.

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## **11.1 INTRODUCTION**

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Dear students in this lesson you will get to know about 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.

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## 11.2 CONCEPT OF LEVERAGE

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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.

$$\text{Leverage} = \frac{\% \text{ Change in the dependent variable}}{\% \text{ Change in the Independent variable}}$$

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

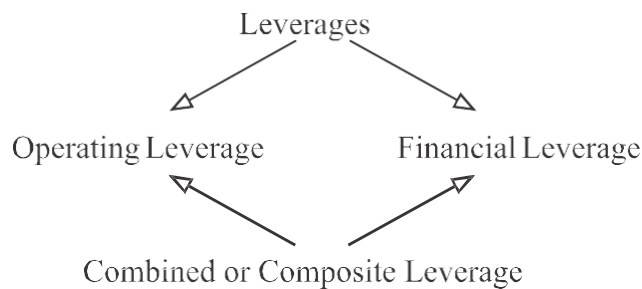
$$= .50/.20$$

$$= 2.5$$

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
<u>-Variable costs</u>	<u>- Interest</u>
Contribution	Profit before tax
-Fixed Costs	- Tax
<span style="border: 1px solid black; padding: 2px;">EBIT</span>	<span style="border: 1px solid black; padding: 2px;">Profit after Tax (EPS)</span>

The left hand side shows that the level of EBIT depends upon the level of sales revenue and the right hand side shows 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 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:

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### **11.3 TYPES OF LEVERAGE**

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#### **11.3.1 OPERATING 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:

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{Operating Profit (EBIT)}}$$

### 11.3.2 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.

### 11.3.3 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.

$$\text{DCL} = \text{DOL} \times \text{DFL} = \frac{\text{Contribution}}{\text{EBIT}} \times \frac{\text{EBIT}}{\text{PBT}} = \frac{\text{Contribution}}{\text{PBT}}$$

## **A. CHECK YOUR PROGRESS**

### **Multiple Choice Questions**

#### **1. Which of the following best describes operating leverage?**

- A) The use of fixed financial costs to magnify returns to shareholders
- B) The use of fixed operating costs to magnify the effects of changes in sales on operating income
- C) The use of debt to increase the return on equity
- D) The sensitivity of a firm's net income to changes in sales

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#### **2 ☐. Financial leverage affects which part of a firm's financial statements?**

- A) Sales Revenue
- B) Operating Profit (EBIT)
- C) Net Profit after Interest and Taxes
- D) Total Assets

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#### **3 ☐. If a company has high operating leverage, what does it indicate?**

- A) A high proportion of variable costs in total costs
- B) A high proportion of fixed costs in total costs
- C) No fixed costs at all
- D) All costs are directly proportional to sales

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#### **4 ☐. Combined leverage is a combination of:**

- A) Operating leverage and liquidity leverage
- B) Financial leverage and market leverage
- C) Operating leverage and financial leverage
- D) Business risk and market risk

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#### **5 ☐. Which of the following statements about leverage is true?**

- A) Higher leverage always reduces risk
- B) Financial leverage only affects companies with no fixed costs
- C) High operating leverage means small changes in sales can cause large changes in EBIT
- D) Combined leverage only measures financial risk



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## 11.4 DIFFERENCE BETWEEN OPERATING LEVERAGE AND FINANCIAL LEVERAGE

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Sl. No	Operating leverage	Financial leverage
1	Operating leverage is associated with investment activities of the company.	Financial leverage is associated with financing activities of the company.
2	Operating leverage consists of fixed operating expenses of the company.	Financial leverage consists of operating profit of the company.
3	It represents the ability to use fixed operating cost.	It represents the relationship 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 from a percentage change in the sales is called as degree of operating leverage.	A percentage change in taxable profit is the result of percentage change in EBIT.
6	Trading on equity is not possible while the company is operating leverage.	Trading on equity is possible only when the company uses financial leverage
7	Operating leverage depends upon fixed cost and variable cost.	Financial leverage depends upon the operating profits.
8	Tax rate and interest rate will not affect the operating leverage.	Financial leverage will change due to tax rate and interest rate.

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## 11.5 WORKING CAPITAL LEVERAGE

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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 changes in the level of current assets.

$$\text{Working Capital Leverage} = \frac{\text{Percentage change in ROI}}{\text{Percentage change in Working Capital}}$$

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.

$$\text{Working Capital Leverage} = \frac{CA}{TA + DCA}$$

where, CA = Current Assets, TA = Total Assets, DCA = Changes in the level of Current Assets.

### B. CHECK YOUR PROGRESS

#### Case Study

##### Company Overview:

Zenith Electronics Ltd. is a mid-sized manufacturer of consumer electronics. The company currently operates with significant fixed costs due to expensive production machinery and long-term rental agreements. It's considering launching a new product line and needs to assess the risks and returns using leverage analysis.

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#### Financial Data (Existing Operations)

- **Fixed Operating Costs:** ₹50,00,000
- **Variable Cost per Unit:** ₹2,000
- **Selling Price per Unit:** ₹3,000
- **Current Sales Volume:** 25,000 units
- **Interest on Debt:** ₹10,00,000

#### Questions

1. Calculate the Operating Leverage (DOL) at the current sales level.
2. Calculate the Financial Leverage (DFL) at the current sales level.
3. Calculate the Combined Leverage (DCL) at the current sales level.
4. Interpret what these leverage values indicate about the risk and profitability profile of Zenith

## **11.6 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 earnings 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.

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## **11.7 APPLICATION OF LEVERAGES**

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### **Operating leverage**

The operating leverage indicates the impact of change in sales on operating income. If a firm has a high degree of operating leverage, small change in sales will have large effect on operating income. A few areas of application are as follows :

- (1) Operating leverage has an important role in capital budgeting decisions. Infact, this concept was originally developed for use in capital budgeting.
- (2) Long term profit planning is also possible by looking at quantam of fixed cost investment and its possible effects.
- (3) Generally, a high degree of operating leverage increases the risk of a firm. For deciding capital structure in favour of debt, the impact of further increase in risk will influence capital structure decision.

## **Financial leverage**

Financial leverage is useful in (i) Capital structure planning and (ii) Profit Planning

Financial leverage helps the finance managers while devising the capital structure of the company. A high financial leverage means high fixed financial costs and high financial risk. Increase in fixed financial costs may force the company into liquidation.

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### **11.8 LET US SUM UP**

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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,  $K_d$  and the cost of equity capital  $K_e$  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,  $K_e$  is equal to  $K_o$  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.

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### **11.9 KEYWORDS**

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- **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.

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### 11.10 SELFASSESSMENT QUESTIONS

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Q1. Distinguish between operating leverage and financial leverage.

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Q2. Explain the concept of financial leverage.

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Q3. Explain working capital leverage.

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Q4. How operating leverage and financial leverage can be measured?

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### 11.11 LESSON END EXERCISE

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Q1. Is there any relationship between financial leverage operating and leverage? Explain.

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Q2. What are the applications of leverage ?

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### 11.12 ANSWER KEY

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#### Check Your Progress A

B  
C  
B  
C  
C

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### 11.13 SUGGESTED READINGS

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## **LEVERAGES AND CAPITAL STRUCTURE**

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**Lesson No. 12**

**Unit-III (Credit-1)**

**Semester-II**

**MCOMC252**

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### **COMPUTATION OF OPERATING LEVERAGE, FINANCIAL LEVERAGE AND COMBINED LEVERAGE; IMPORTANCE AND LIMITATIONS OF LEVERAGE ANALYSIS**

#### **STRUCTURE**

- 12.0 Learning Objectives and Outcomes
- 12.1 Introduction
- 12.2 Computation of Operating leverage
- 12.3 Computation of Financial Leverage
- 12.4 Computation of Combined Leverage
- 12.5 Importance of Leverage Analysis
- 12.6 Limitations of Leverage Analysis
- 12.7 Risk and Leverage
- 12.8 Relationship between Financial Risk and Financial Leverage
- 12.9 Let Us Sum Up
- 12.10 Keywords
- 12.11 Self-Assessment Questions
- 12.12 Lesson End Exercise
- 12.13 Suggested Readings

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## **12.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- understand the importance and limitations of leverage analysis
- compute the operating leverage, financial leverage and combined leverage and
- identify the relationship between risk and leverage.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- compare financial risk and financial leverage.
- understand significance of operating leverage and
- apprehend the effects of operating leverage on value of the firm.

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## **12.1 INTRODUCTION**

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In this lesson you will be enriched by the significance of the relationship between sales and EBIT on the value of the firm. 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.

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## 12.2 COMPUTATION OF OPERATING LEVERAGE

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When the sale increases or decreases, the EBIT also changes. 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:

$$\text{Operating Leverage} = \frac{\% \text{ change in EBIT}}{\% \text{ change in sales}} = \frac{\frac{\text{Increase in EBIT}}{\text{EBIT}}}{\frac{\text{Increase in sales}}{\text{Sales}}}$$

The operating leverage at any volume of sales is defined as its degree. The degree of operating leverage is computed by dividing contribution by EBIT.

$$\begin{aligned}\text{Degree of operating leverage} &= \frac{\text{Contribution}}{\text{EBIT}} \\ \text{Here, contribution} &= \text{Sales} - \text{Variable cost} \\ \text{EBIT} &= \text{Sales} - \text{Variable cost} - \text{Fixed cost}\end{aligned}$$

For example, when Sales: 1, 50,000 units at Rs 4 per unit; Variable cost per unit Rs 2; Fixed cost Rs 1, 50,000; Interest charges Rs 25,000, operating leverage can be calculated as:

**Solution:** We know

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

Here, Sales = 1,50,000 × Rs 4	= Rs 6,00,000
Less: Variable Cost: 1,50,000 × Rs 2	= Rs 3,00,000
Contribution	<u>Rs 3,00,000</u>
Less: Fixed Cost	<u>Rs 1,50,000</u>
EBIT	<u>Rs 1,50,000</u>

$$\therefore \text{DOL} = \frac{\text{Rs 3,00,000}}{\text{Rs 1,50,000}} = 2$$

Another 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 x (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

$$\text{DOL} = \frac{\text{Percentage change in EBIT} / \text{Percentage change in Sale}}{\frac{\text{Rs. } \underline{1200}}{300} / \frac{\text{Rs. } \underline{4000}}{10,000}} = 1$$

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 break-even 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 than the break-even 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 manager. 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 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. 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.

#### **A. CHECK YOUR PROGRESS**

##### **Practical Questions**

A company has the following details:

- **Selling Price per Unit:** ₹500
- **Variable Cost per Unit:** ₹300
- **Fixed Operating Costs:** ₹10,00,000
- **Sales Volume:** 8,000 units

**Calculate the Degree of Operating Leverage (DOL).**

**Formula:**

$$\text{DOL} = \text{Contribution} / \text{EBIT}$$

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### **12.3 COMPUTATION OF FINANCIAL LEVERAGE**

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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.

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 =

$$\frac{\text{Profit (EBIT)}}{\frac{\text{Operating profit (EBIT)}}{\text{Profit before Tax}}}$$

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:

$$\text{DFL} = \frac{\text{Percentage change in taxable income}}{\text{Percentage change in operating income}}$$

### **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”.

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

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 then 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.

#### **B. CHECK YOUR PROGRESS**

##### **Practical Questions**

##### **Financial Leverage (DFL)**

Using the EBIT calculated from Check Your Progress A, assume:

- **Interest Expense:** ₹2,00,000

**Calculate the Degree of Financial Leverage (DFL).**

**Formula:**

$$DFL = \text{EBIT} / \text{EBIT} - \text{Interest}$$

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## **12.4 COMPUTATION OF COMBINED LEVERAGE**

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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:

$$DCL = DOL \times DFL$$

**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.

$$\text{Degree of combined leverage} = \frac{\text{Percentage change in EPS}}{\text{Percentage change in Sales}}$$

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.

### **C. CHECK YOUR PROGRESS**

#### **Practical Questions**

#### **Combined Leverage (DCL)**

Using your results from Check Your Progress A & B calculate the Degree of Combined Leverage (DCL).

#### **Q4: Impact of Sales Increase**

If the company increases its sales volume by **10%**, by what percentage will the **EBT (Earnings Before Tax)** increase, based on the DCL calculated in Check Your Progress C?

#### **Q5: Break-even Sales (Units)**

At what sales volume will the company break even?

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:

$$DCL = DOL \times DFL$$

#### **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.

$$\text{Degree of combined leverage} = \frac{\text{Percentage change in EPS}}{\text{Percentage change in Sales}}$$

The Combined Leverage is interpreted as:

- (d) The Combined Leverage is the % change in EPS resulting from a 1% change in sales level.
- (e) 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.

- (f) 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.

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## 12.5 IMPORTANCE OF LEVERAGE ANALYSIS

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In financial management, the term 'leverage' means the influence of one financial variable (i.e., financial factor or financial figure) over some other related financial variable. To be more specific, the term leverage is used to describe the ability of a company to use fixed charges sources of funds (i.e., the funds for which a company pays fixed costs termed as fixed operating costs) or fixed cost funds (i.e., funds for which a company pays fixed returns termed as fixed financial costs) to magnify (i.e., to increase) the returns to shareholders. In other words, the term refers to the employment, by a company, of sources of funds which have fixed costs or fixed returns the size of which (i.e., the size of such fixed costs or fixed returns) has considerable influence over the amount of profits available for the shareholders. James Horne defines leverage as the employment of an asset or funds for which the firm pays a fixed cost or fixed return.

As fixed cost or fixed return has to be incurred irrespective of the volume of sales, the size of fixed cost or fixed return has considerable effect on the amount of profits available for the shareholders. The effect of change in the volume of sales on the profits available for the shareholders can be measured or quantified with the help of leverage. So, leverage can also be defined as relative change in profits due to a change in sales. A high degree of leverage implies a large change in profits due to a relatively small change in sales, and vice versa. Thus, the higher is the leverage, the higher is the risk and higher is the expected return.

The concept of leverage is of much **importance** in financial analysis. It has certain uses or advantages. They are:

- (a) Leverage serves as an important tool for financial planning.
- (b) It provides the framework for financing decisions. With the help of the technique of leverage, the financial manager of a concern can evaluate various financing plans and take prudent financing and investment decisions.
- (c) Leverage is a means of increasing profits, which maybe operating profits or earnings for shareholders.

- (d) Leverage is helpful in assessing the risk associated with the employment of high fixed cost assets or with the induction of high debt financing.
- (e) The degree of leverage can be used as a device for predicting the future.

The main objective of any management is to optimise the wealth of the shareholders in the long run. To achieve this objective, the management has to make an intelligent use of both operating leverage and financial leverage. It has to make an intelligent use of operating leverage in profit planning and financial leverage in planning the capital structure. The use of operating leverage helps the management to determine the profits at various levels of output and sales and plan for the proper operating level, having regard to market risks. The use of financial leverage helps the management to determine the proper and safe debt-equity mix in the capital structure, having regard to financial risks. That means, a company should make use of both the operating leverage and the financial leverage (i.e., should combine both the leverages), and should try to have a proper combination of both the leverages. A proper combination of both the leverages contributes to the growth of the company, while an improper combination of both the leverages restricts the growth of the company.

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## 12.6 LIMITATIONS OF LEVERAGE ANALYSIS

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It is true that, for its successful growth, a company should have a proper combination of both the leverages. But the establishment of a proper combination of both the leverages is a big challenge for the management.

While trying to have a proper combination of both the leverages, the management must bear in mind the following **limitations** of leverage analysis:

- a. A high degree of operating leverage together with a high degree of financial leverage makes the position of the company very risky. This is because, on the one hand, the company is employing excessively large fixed cost assets for which it has to incur high fixed costs and at the same time, the company is also using a large amount of

debt capital for which it has to pay high fixed interest charges. So, sound business and financial practices dictate that companies which suffer from frequent changes in profit should avoid this situation.

- b. A low operating leverage together with a low financial leverage is also not good. This is because it is a conservative approach, and as a result, the concern will be losing many growing profit-earning business opportunities.
- c. The normal situation demands that one of the leverages should be high and the other should be low. If a concern has low operating leverage, its financial leverage can be high, and vice versa.
- d. Though the normal situation is that one of the leverages should be low and the other should be high, the ideal situation seems to be a low operating leverage with a high financial leverage. This would contribute to the maximisation of profit with minimum risk.

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## **12.7 RISK AND LEVERAGE**

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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.



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## 12.8 RELATIONSHIP BETWEEN FINANCIAL RISK AND FINANCIAL LEVERAGE

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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.

### D. CHECK YOUR PROGRESS

#### Case Study

##### Company Overview

**Galaxy Textiles Ltd.** is a garment manufacturing company that has been growing steadily over the last decade. The company now faces a strategic decision: whether to expand operations by borrowing additional funds (increasing financial leverage) or to fund the expansion through internal accruals and equity.

The management is concerned about how these financial decisions will affect the company's risk profile and shareholder returns.

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#### Current Financials

Particulars	Amount (₹)
Sales	5,00,00,000
Variable Costs (60% of Sales)	3,00,00,000
Fixed Operating Costs	1,00,00,000
Interest on Debt	20,00,000

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#### Proposed Expansion Plan

- **Additional Investment:** ₹2,00,00,000
- Option A: Finance through **Debt @ 10% interest**

- Option B: Finance through **equity** (no interest but dilution of ownership)

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### Questions

**Q1. Calculate the Degree of Operating Leverage (DOL) for the current operations.**

**Q2. Calculate the Degree of Financial Leverage (DFL) for the current operations.**

**Q3. Calculate the Degree of Combined Leverage (DCL).**

**Q4. Discuss how the proposed expansion (especially if financed by debt) would affect the company's:**

- **Business Risk**
- **Financial Risk**
- if the company takes on more debt, how would it impact the risk of insolvency during a sales downturn?
- Would higher leverage necessarily mean higher returns to shareholders? Under what market conditions?
- Should Galaxy Textiles Ltd. prioritize stable risk or higher returns in a volatile market?

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## 12.9 LET US SUM UP

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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,  $K_d$  and the cost of equity capital  $K_e$  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,  $K_e$  is equal to  $K_o$  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.

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## 12.10 GLOSSARY

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1. **Operating leverage:** It increases as the ratio of fixed costs to variable costs increases.
2. **Variable cost:** Costs that change with the level of production.
3. **Breakeven point:** The level of sales where a company's revenues equal its cost. Profit is zero at this point.

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## 12.11 SELFASSESSMENT QUESTIONS

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Q1. Distinguish between operating leverage and financial leverage.

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Q2. Explain the concept of financial leverage.

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Q3. Examine the impact of financial leverage on the EPS. Does the financial Leverage always increases the EPS?

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Q4. How operating leverage and financial leverage can be measured?

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### 12.12 LESSON END EXERCISE

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Q1. Is there any relationship between risk and leverage? Explain.

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2. Calculate the degree of financial leverage from the following information: Capital structure: 10,000, Equity Shares of Rs 10 each Rs 1, 00,000. 5,000, 11 % Preference Shares of Rs 10 each Rs 50,000. 9% Debentures of Rs 100 each Rs 50,000. The EBIT of the company is Rs 50,000 and corporate tax rate is 45%.

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### 12.13 SUGGESTED READINGS

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## **LEVERAGES AND CAPITAL STRUCTURE**

**Lesson No. 13**

**Unit-III (Credit-1)**

**Semester-II**

**MCOMC252**

### **CAPITAL STRUCTURE-CONCEPT, ASSUMPTIONS, OPTIMUM CAPITAL STRUCTURE, DESIGNING CAPITAL STRUCTURE**

#### **STRUCTURE**

- 13.0 Learning Objectives and Outcomes
- 13.1 Introduction
- 13.2 Concept and Types of Capital Structure
- 13.3 Significance of Capital Structure
- 13.4 Capital Structure v/s Financial Structure
- 13.5 Designing Capital Structure
- 13.6 Assumptions of Capital Structure
- 13.7 Optimum Capital Structure
- 13.8 Factors Influencing Capital Structure
- 13.9 Features of Optimal Capital Structure
- 13.10 Capital Structure & Valuation
- 13.11 EBITDA Analysis
- 13.12 Let Us Sum Up
- 13.13 Keywords
- 13.14 Self-Assessment Questions
- 13.15 Lesson End Exercise
- 13.16 Answer Key
- 13.17 Suggested Readings

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## **13.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- explain the types of capital structure
- identify the attributes of well planned capital structure and
- explain significance and assumptions of capital structure.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- comprehend the types and theories of capital structure
- design a capital structure of a firm
- understand the assumptions of capital structure and
- be able to draft an optimum capital structure.

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## **13.1 INTRODUCTION**

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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.

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## **13.2 CONCEPT AND TYPES OF CAPITAL STRUCTURE**

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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 means 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**, Capital Structure is “The mix of a firm’s permanent long-term financing represented by debt, preferred stock and common stock equity”.

### **Types of Capital Structure**

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 which are 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.

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### **13.3 SIGNIFICANCE OF CAPITAL STRUCTURE**

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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 is also 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.

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### **13.4 CAPITAL STRUCTURE V/S FINANCIAL STRUCTURE**

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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 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:

1. 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.

2. 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.
3. 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.
4. 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.

### **A. CHECK YOUR PROGRESS**

#### **Multiple Choice Questions**

**1. Which of the following best defines capital structure?**

- A) The ratio of current assets to current liabilities
- B) The combination of long-term debt and equity that a company uses to finance its operations
- C) The mix of fixed and variable costs in a company
- D) The total sales divided by total assets

**2. Which theory of capital structure suggests that there is an optimal capital structure where the cost of capital is minimized and the value of the firm is maximized?**

- A) Modigliani-Miller Proposition (with no taxes)
- B) Net Income (NI) Approach
- C) Pecking Order Theory
- D) Trade-Off Theory

**3. According to the Modigliani-Miller theorem (with no taxes), the value of a firm:**

- A) Increases with higher debt
- B) Decreases with higher equity
- C) Is independent of its capital structure
- D) Depends solely on the cost of debt

**4. In the context of capital structure, what is meant by ‘financial risk’?**

- A) Risk associated with operating fixed costs
- B) Risk to equity holders due to the use of debt financing
- C) Risk of losing customers
- D) Risk associated with market price fluctuations

**5. Which of the following is considered a benefit of using debt in a firm’s capital structure?**

- A) It increases financial risk
- B) Interest payments are tax-deductible
- C) It decreases the company’s creditworthiness
- D) It dilutes the control of existing shareholders

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### **13.5 DESIGNING CAPITAL STRUCTURE**

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While designing capital structure of a firm, the following attributes must be kept in mind

- 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.

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### **13.6 ASSUMPTIONS OF CAPITAL STRUCTURE**

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To examine the relationship between capital structure and cost of capital (or firm value) the following simplifying assumptions are commonly made:

- 1.** There is no income tax, corporate or personal.
- 2.** The firm pursues a policy of paying all of its earnings as dividends. Put differently a 100 percent dividend payout ratio is assumed.
- 3.** Investors have identical subjective probability distributions of operating income (earnings before income and taxes) for each company.
- 4.** The operating income is not expected to grow or decline over time.
- 5.** 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:

Assuming that the debt is perpetual,  $r_D$  represents the cost of debt.

$$r_E = \frac{P}{E} = \frac{\text{Equity earnings}}{\text{Market value of equity}}$$

When the dividend payout ratio is 100 percent and earnings constant,  $r_E$ , as defined here, represents the cost of equity.

$$r_A = \frac{O}{V} = \frac{\text{Operating income}}{\text{Market value of the firm}}$$

where  $V = D + E$ .  $r_A$  is the overall capitalisation rate of the firm. Since it is the weighted average cost of capital, it may be expressed as follows:

$$r_A = r_D \left[ \frac{D}{D + E} \right] + r_E \left[ \frac{E}{D + E} \right]$$

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### 13.7 OPTIMUM CAPITAL STRUCTURE

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By the term ‘optimum 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 optimum capital structure is the best debt to equity ratio for a firm that maximises its value. The optimum 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 optimum combination would be less than satisfying. Hence, a sub- optimum combination would affect the achievement of the goal of maximisation of the shareholders’ wealth. But can we plan and design an optimum 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 optimum 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 optimum 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.

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### **13.8 FACTORS INFLUENCING CAPITAL STRUCTURE**

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Under the capital structure, decision regarding the proportion of long-term 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 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 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.
- l. 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.

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### **13.9 FEATURES OF AN OPTIMUM CAPITAL STRUCTURE**

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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.

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### **13.10 CAPITAL STRUCTURE AND VALUATION**

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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.

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### **13.11 EBITDA ANALYSIS (EARNINGS BEFORE INTEREST, TAX, DEPRECIATION AND AMORTIZATION)**

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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**

EBITDA 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.

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.

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.

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.

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### **13.12 LET US SUM UP**

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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,  $K_d$  and the cost of equity capital  $K_e$  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,  $K_e$  is equal to  $K_o$  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.

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### 13.13 KEYWORDS

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- **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.



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### **13.14 SELFASSESSMENT QUESTIONS**

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- Q1. What is the significance of capital structure? Describe its various kinds.

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- Q2. What points need to be kept in mind while deciding the capital structure of a firm?

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- Q3. Describe the process of planning and designing of capital structure.

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### **13.5 LESSON END EXERCISE**

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- Q1. Explain the various assumptions of capital structure.

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Q2. Compare and contrast the capital structure and financial structure.

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### 13.16 ANSWER KEY

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#### Check Your Progress A

B  
D  
C  
B  
B

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### 13.17 SUGGESTED READINGS

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## **LEVERAGES AND CAPITAL STRUCTURE**

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**Lesson No. 14**

**Unit-III (Credit-1)**

**Semester-II**

**MCOMC252**

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### **APPROACHES OF CAPITAL STRUCTURE-NET INCOME APPROACH; NET OPERATING INCOME APPROACH; TRADITIONAL APPROACH; MM HYPOTHESIS**

#### **STRUCTURE**

- 14.0 Learning Objectives and Outcomes
- 14.1 Introduction
- 14.2 Approaches of Capital Structure
  - 14.2.1 Net Income Approach
  - 14.2.2 Net Operating Income Approach
  - 14.2.3 Traditional Approach
  - 14.2.4 Modigliani-Millar Hypothesis Approach
- 14.3 Let Us Sum Up
- 14.4 Keywords
- 14.5 Self-Assessment Questions
- 14.6 Lesson End Exercise
- 14.7 Answer Key
- 14.8 Suggested Readings

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## **14.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- explain the meaning of net income approach
- identify the various factors affecting theories of capital structure
- understand the relevance of capital structure and

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- comprehend the theories of capital structure
- compare the various theories of optimum capital structure.
- be able to draft an optimum capital structure.

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## **14.1 INTRODUCTION**

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Dear learners in this lesson you will be able to have a deep knowledge about the relevance of capital structure decisions in financial management. These 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.

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## **14.2 APPROACHES OF CAPITAL STRUCTURE**

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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 leverage 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:

$$\begin{aligned} \text{Cost of debt} &= K_d = R/D \\ \text{Value of debt} &= d = R/K_d \end{aligned}$$

$$\text{Equity} = K_e = \frac{D}{P} + g$$

$$P \text{ Value of equity} = S = \frac{\bar{x} - K_d D}{K_e}$$

$$\text{Weighted average cost of capital} = K_o = \bar{x}/V = \text{NOI}/V$$

$$\text{Total value of the firm} = V = (S+D) = \frac{\bar{x}}{K_o} = \frac{\text{NOI}}{K_o}$$

$S$  = Market value of common shares

$D$  = Market value of debt

$V$  = Total market value of the firm ( $S+D$ )

$\text{NOI} = \bar{x}$  = Expected net operation income, i.e., earnings before interest and taxes (EBIT)

$R$  = Interest charges (i.e.,  $K_d D$ )

$\text{NI} = \bar{x}$  = Net income or shareholders' earnings

$g$  = Growth rate

$p$  = Market price per share

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.

#### **14.2.1 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 14.1**

**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% ( $K_e$ );

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%.

**Solution :**

**Statement Showing the Cost of Capital and the Value of the Firm**

Degree of Leverage	0	0.2	0.5	0.7	1.0
	Rs.	Rs.	Rs.	Rs.	Rs.
Equity Capital	2,00,000	1,60,000	1,00,000	60,000	—
Debt Capital	—	40,000	1,00,000	1,40,000	2,00,000
Total	<u>2,00,000</u>	<u>2,00,000</u>	<u>2,00,000</u>	<u>2,00,000</u>	<u>2,00,000</u>
EBIT @ 15%	30,000	30,000	30,000	30,000	30,000
Less : Interest on Debt	—	4,000	10,000	14,000	20,000
Earnings to Equity	<u>30,000</u>	<u>26,000</u>	<u>20,000</u>	<u>16,000</u>	<u>10,000</u>
Market Value of Debt	—	40,000	1,00,000	1,40,000	2,00,000
Market Value of Equity					
Earnings $\left( \frac{\text{Earnings}}{K_e} \right)$	2,00,000	1,73,333	1,33,333	1,06,667	66,667
Total Value of the firm	<u>2,00,000</u>	<u>2,13,333</u>	<u>2,33,333</u>	<u>2,46,667</u>	<u>2,66,667</u>
Thus,					
Cost of Debt ( $K_d$ ) — Given	10%	10%	10%	10%	10%
Cost of Equity ( $K_e$ ) — Given	15%	15%	15%	15%	15%
Average Cost of Capital $\left( \frac{T}{V} \right)$	30%	28%	25%	23%	20%

**Workings :**

Average Cost of Capital is computed as under (under various financing plans) :

$$K_w = \left( \frac{T}{V} \right) K_d + \left( \frac{S}{V} \right) K_e \text{ substituting the values :}$$

(i) When leverage is 0

$$K_w = 0 \times 10 + 2 \times 15 = 30\%$$

(ii) When leverage is 0.2

$$K_w = .4 \times 10 + .16 \times 15 = 28\%$$

(iii) When leverage is 0.5

$$K_w = .10 \times 10 + .10 \times 15 = 25\%$$

(iv) When leverage is 0.7

$$K_w = .14 \times 10 + .6 \times 15 = 23\%$$

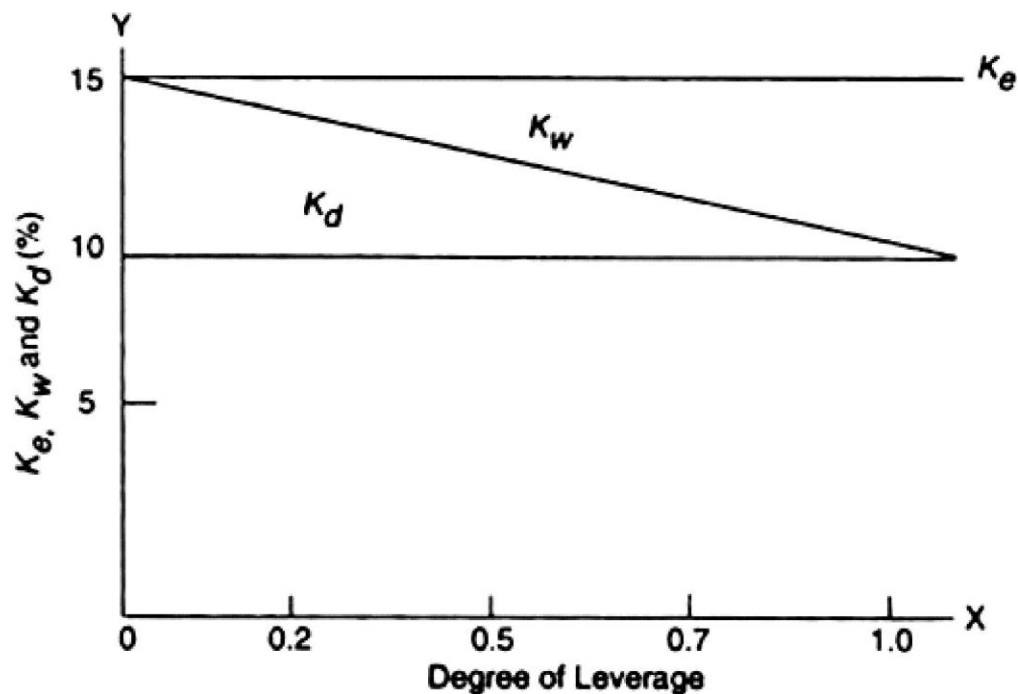
(v) When leverage is 1

$$K_w = .20 \times 10 + 0 \times 15 = 20\%$$

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):



**Fig.14.1: Behaviour of  $K_e$ ,  $K_w$  and  $K_d$  as per Net Income Approach**

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 (NI) 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.

$$\text{WACC} = \frac{\text{Required Rate of Return} \times \text{Amount of Equity} + \text{Rate of Interest} \times \text{Amount of Debt}}{\text{Total amount of capital( debt and equity)}}$$

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 :

1. Increase in debt will not affect the confidence levels of the investors.

2. The cost of debt is less than cost of equity.
3. There are no taxes levied.

#### **14.2.2 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 ( $K_w$ ):

$$V = \text{EBIT} / K_w \text{ (since both are constant and independent of leverage)}$$

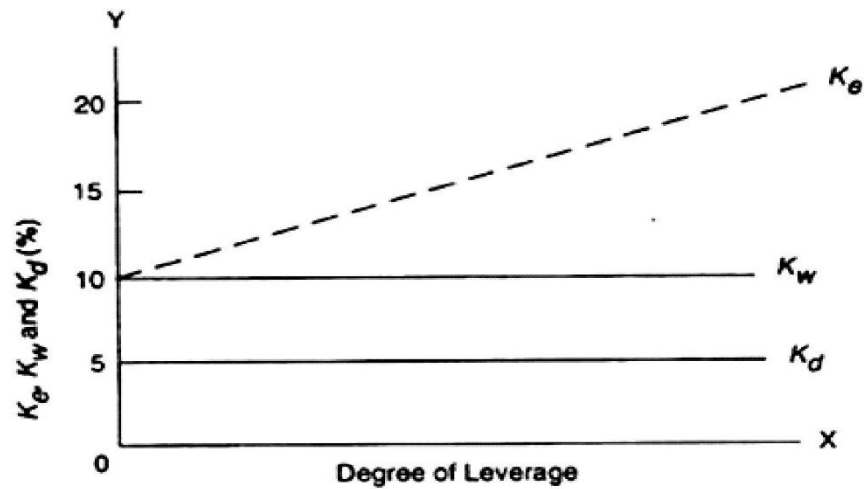
- (iii) The market value of the debt is then subtracted from the total market value in order to get the market value of equity.

$$S = V - T$$

- (iv) As the Cost of Debt is constant, the cost of equity will be

$$K_e = \text{EBIT} - I/S$$

The NOI Approach can be illustrated with the help of the following diagram:



**Fig 14.2:** Behaviours of  $K_e$ ,  $K_w$  and  $K_d$  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 14.2:**

##### **Assume:**

Net Operating Income or EBIT Rs. 30,000

Total Value of Capital Structure Rs. 2,00,000.

Cost of Debt Capital  $K_d$  10%

Average Cost of Capital  $K_w$  12%

Calculate Cost of Equity,  $K_e$ : 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%

**Solution :**

**Statement Showing the Cost of Equity and the Value of the Firm**

Degree of Leverage	0	0.2	0.5	0.7	1.0
	Rs.	Rs.	Rs.	Rs.	Rs.
Equity Capital	2,00,000	1,60,000	1,00,000	60,000	—
Debt Capital	—	40,000	1,00,000	1,40,000	2,00,000
Total	<u>2,00,000</u>	<u>2,00,000</u>	<u>2,00,000</u>	<u>2,00,000</u>	<u>2,00,000</u>
EBIT	30,000	30,000	30,000	30,000	30,000
Less : Interest on Debt Capital (10%)	—	4,000	10,000	14,000	20,000
Earnings to Equity	<u>30,000</u>	<u>26,000</u>	<u>20,000</u>	<u>16,000</u>	<u>10,000</u>
Value of firm (V)					
$V = \frac{EBIT}{K_w}$	2,50,000	2,50,000	2,50,000	2,50,000	2,50,000
Less : Value of Debt (T)	—	40,000	1,00,000	1,40,000	2,00,000
Value of Equity (S)	<u>2,50,000</u>	<u>2,10,000</u>	<u>1,50,000</u>	<u>1,10,000</u>	<u>50,000</u>
Thus,					
$(K_d)$ Given	10%	10%	10%	10%	10%
$(K_e)$ Given	12%	12%	12%	12%	12%
$(K_e) \left( \frac{EBIT}{S} \right)$	12%	12.4%	13.3%	14.5%	20%

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 proportionately 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 NI 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.

### **A. CHECK YOUR PROGRESS**

#### **Multiple Choice Questions**

**Q1.** According to the Net Income (NI) Approach of capital structure, what happens to the value of the firm as the proportion of debt increases in the capital structure?

- A) It decreases
- B) It remains constant
- C) It increases
- D) It fluctuates randomly

**Correct Answer: C**

**Q2.** The Net Income (NI) Approach assumes that:

- A) Cost of debt increases with higher leverage
- B) Cost of equity remains constant with changes in leverage
- C) Overall cost of capital increases with leverage
- Value of the firm decreases with more debt

**Correct Answer: B**

**Q3.** According to the Net Operating Income (NOI) Approach, what happens to the value of the firm when leverage is increased?

- A) It increases
- B) It decreases
- C) It remains constant
- D) It first increases, then decreases

**Correct Answer: C**

**Q4.** The NOI Approach assumes that:

- A) Cost of equity increases with leverage, but the overall cost of capital remains constant
- B) Cost of debt decreases with higher leverage
- C) Overall cost of capital increases with higher debt
- D) Value of the firm fluctuates with changes in the debt-equity ratio

**Correct Answer: A**

**Q5.** Which of the following correctly differentiates between the NI and NOI approaches regarding capital structure relevance?

- A) Both approaches state that capital structure is irrelevant
- B) NI Approach says capital structure affects firm value, while NOI Approach says it does not
- C) NOI Approach says capital structure affects firm value, while NI Approach says it does not
- D) Neither approach deals with capital structure

**Correct Answer: B**

## **B. CHEK YOUR PROGRESS**

### **Q1: Conceptual**

**Which of the following is a key assumption of the Net Income (NI) approach to capital structure?**

- A) The overall cost of capital remains constant regardless of debt-equity mix
- B) The cost of debt increases with more debt
- C) The cost of equity increases as debt increases



D) The cost of debt remains constant and increasing debt reduces the overall cost of capital

## **Q2: Numerical**

A company has the following financials:

- EBIT: ₹5,00,000
- Cost of Debt: 10%
- Total Capital: ₹25,00,000
- Debt: ₹10,00,000
- Cost of Equity: 15%

**Calculate the value of the firm and overall cost of capital under the NI approach.**

## **Q3 Conceptual**

According to the Net Operating Income (NOI) approach, the cost of capital:

- A) Increases as the firm uses more debt
- B) Decreases as the firm uses more debt
- C) Remains constant regardless of the capital structure
- D) Is lowest when the firm is fully equity-financed

## **Q4 Numerical**

A company has:

- EBIT: ₹6,00,000
- Cost of overall capital ( $K_o$ ): 12%
- Debt: ₹15,00,000
- Cost of Debt: 10%

**Find the total value of the firm and the value of equity using NOI approach.**

## **Q5: Discussion**

**Why does the NOI approach argue that capital structure is irrelevant to firm value?**

**Q6.** According to the Net Income (NI) Approach of capital structure, what happens to the value of the firm as the proportion of debt increases in the capital structure?

- A) It decreases

- B) It remains constant
- C) It increases
- D) It fluctuates randomly

**Q8.** The Net Income (NI) Approach assumes that:

- A) Cost of debt increases with higher leverage
- B) Cost of equity remains constant with changes in leverage
- C) Overall cost of capital increases with leverage
- D) Value of the firm decreases with more debt

**Q9.** According to the Net Operating Income (NOI) Approach, what happens to the value of the firm when leverage is increased?

- A) It increases
- B) It decreases
- C) It remains constant
- D) It first increases, then decreases

**Q10.** The NOI Approach assumes that:

- A) Cost of equity increases with leverage, but the overall cost of capital remains constant
- B) Cost of debt decreases with higher leverage
- C) Overall cost of capital increases with higher debt
- D) Value of the firm fluctuates with changes in the debt-equity ratio

**Q11.** Which of the following correctly differentiates between the NI and NOI approaches regarding capital structure relevance?

- A) Both approaches state that capital structure is irrelevant
- B) NI Approach says capital structure affects firm value, while NOI Approach says it does not
- C) NOI Approach says capital structure affects firm value, while NI Approach says it does not
- D) Neither approach deals with capital structure

### **14.2.3 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.

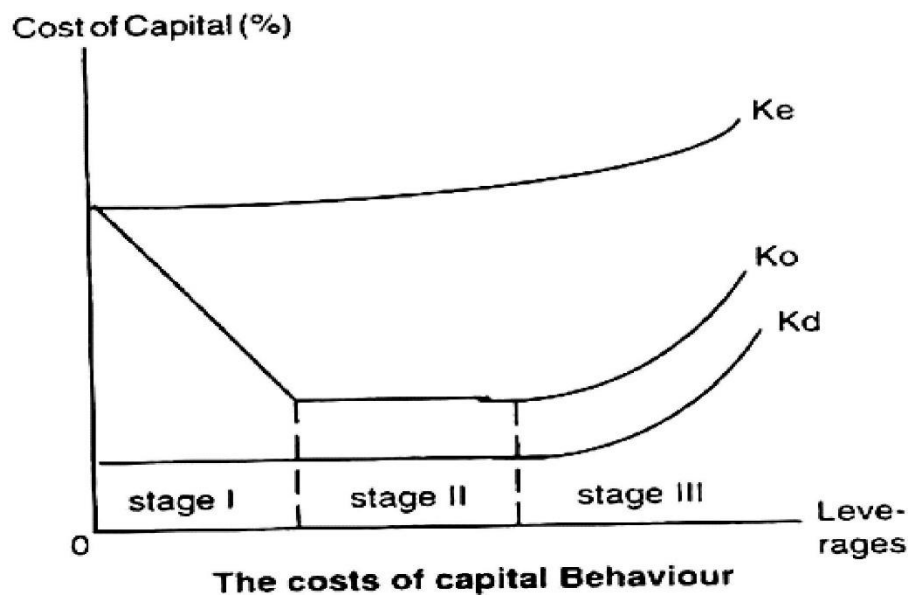
The traditional approach explains that up to a certain point, debt-equity mix will cause the market value of the firm to rise and the cost of capital to decline. But after attaining the optimum level, any additional debt will cause to decrease the market value and to increase the cost of capital.

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.

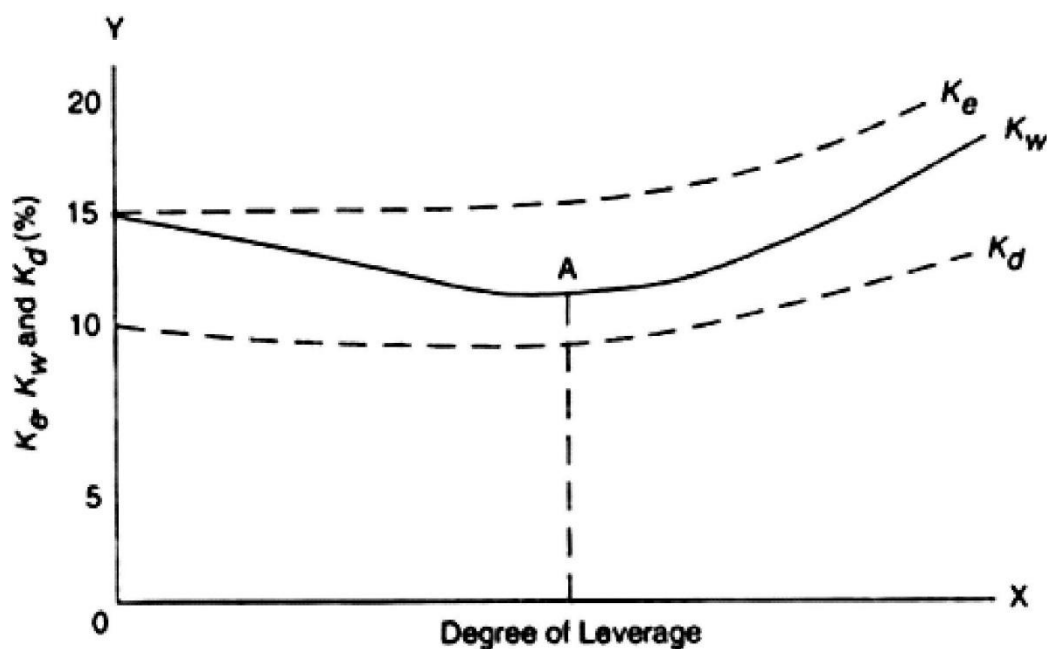
**Thus, the basic proposition of this approach are:**

- (a) The cost of debt capital,  $K_d$ , remains constant more or less up to a certain level and thereafter rises.
- (b) The cost of equity capital  $K_e$ , remains constant more or less or rises gradually up to a certain level and thereafter increases rapidly.
- (c) The average cost of capital,  $K_w$ , 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.



The traditional approach can graphically be represented under taking the data from the previous illustration:



**Fig.14.3: Behaviour of  $K_e$ ,  $K_w$  and  $K_d$  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:**

<b>EBIT</b>		
Total Value		Rs. 30,000
Capital Structure		Rs. 2,00,000
<b>Cost of Equity</b>		<b>Cost of Debt</b>
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:**

$$\text{Leverage : } \left( \frac{\text{Debt}}{\text{Total Capital}} \right) = 0\%, 20\%, 50\%, 70\%, 100\%.$$

**Solution :**

**Statement Showing the Cost of Capital and the Value of the Firm**

<i>Leverage</i>	<i>0</i>	<i>0.2</i>	<i>0.5</i>	<i>0.7</i>	<i>1.0</i>
Given —					
$K_d$	10%	10%	10%	12%	15%
$K_e$	15%	15%	15%	18%	20%
$K_w = \left(\frac{T}{V}\right)K_d + \left(\frac{S}{V}\right)K_e$	30%*	28%	25%	27.6%	30%
EBIT	30,000	30,000	30,000	30,000	30,000
Less : 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 $S = \left(\frac{EBIT}{K_e}\right) =$	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

\* (i) When financing leverage is 0

$$\begin{aligned}
 K_w &= \left(\frac{T}{V}\right)K_d + \left(\frac{S}{V}\right)K_e \\
 &= .0 \times 10 + .2 \times 15 \\
 &= 30\%
 \end{aligned}$$

(ii) When financing leverage is .2

$$= .4 \times 10 + .16 \times 15 = 28\%$$

(iii) When financing leverage is .5

$$= .10 \times 10 + .10 \times 15 = 25\%$$

(iv) When financing leverage is .7

$$= .14 \times 12 + .6 \times 18 = 27.6\%$$

(v) When financing leverage is 1.0

$$= 2.0 \times 15 + 0 \times 20 = 30\%$$

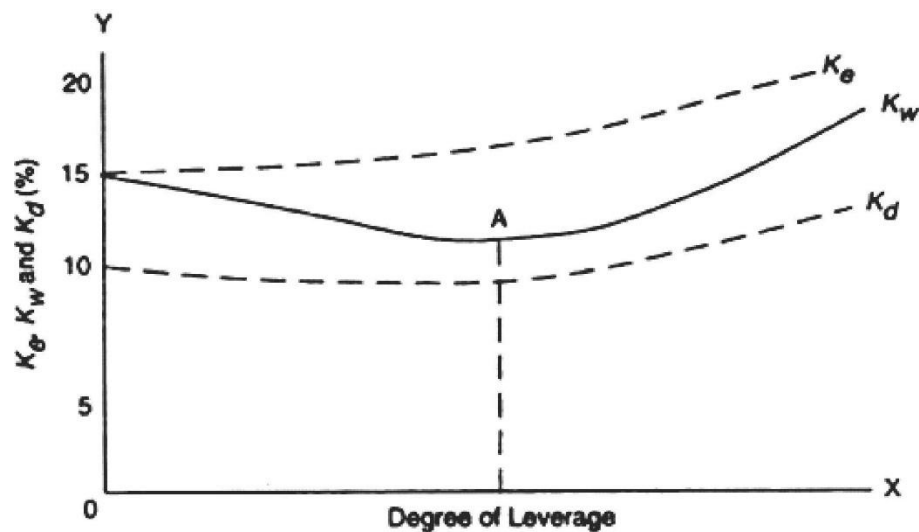
Thus, from the above table, it becomes quite clear the cost of capital is lowest (at 25%) and the value of the firm is the highest (at Rs. 2,33,333) when debt-equity mix is (1,00,000: 1,00,000 or 1: 1). Hence, optimum capital structure in this case is considered as Equity Capital (Rs. 1,00,000) and Debt 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:**

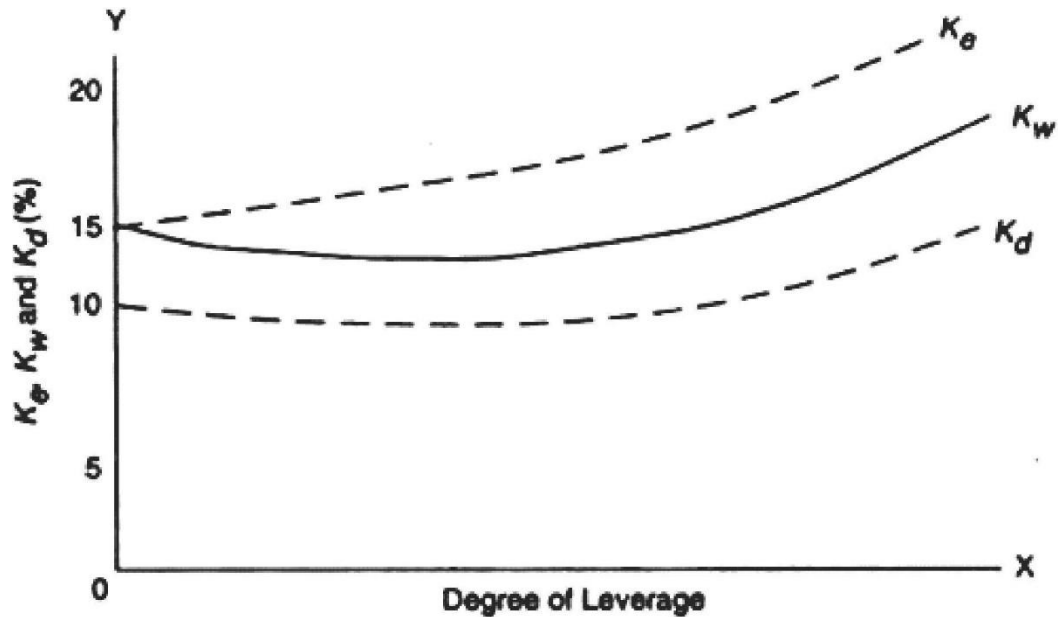


**Fig.14.4: Behaviour of  $K_e$ ,  $K_w$  and  $K_d$  under variation of Degree of Leverage (when  $K_e$  constant at first)**

Other followers e.g., Solomon, are of opinion the  $K_e$  is being saucer-shaped 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.



Such variation can be depicted in the form of graphical representation:



**Fig.14.5: Behaviour of  $K_e$ ,  $K_w$  and  $K_d$  under Saucer-Shaped  $K_e$  Curve of Traditional Approach**

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 cheaper 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.

#### **14.2.4. MODIGLIANI-MILLER (M-M) HYPOTHESIS APPROACH**

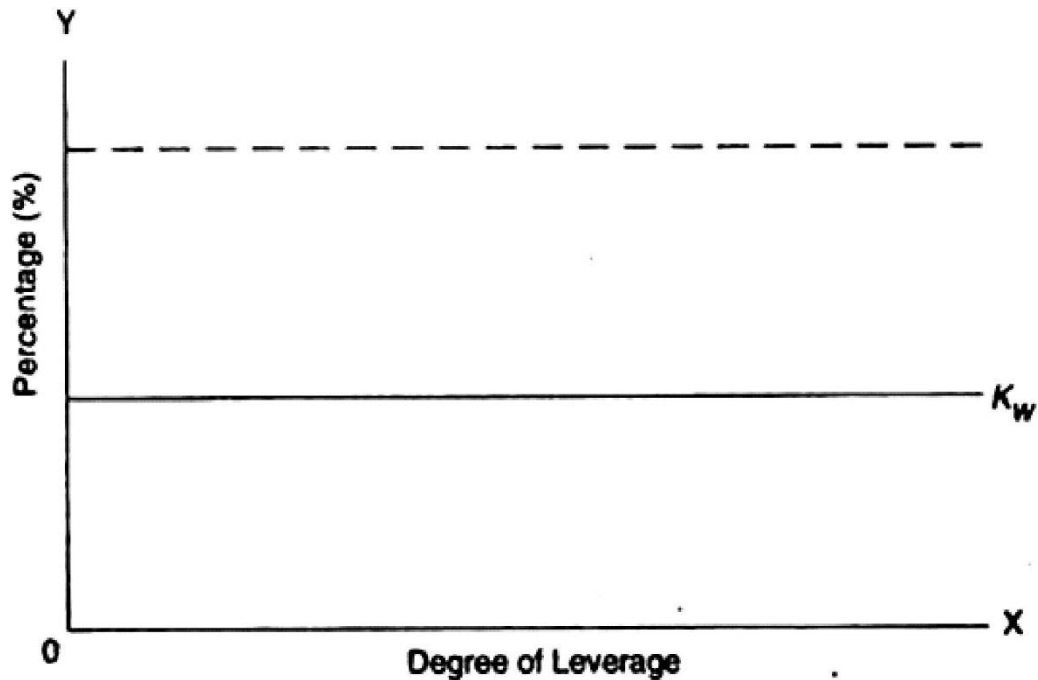
Modigliani-Miller' (MM) advocated that the relationship between the cost of capital, capital structure and the valuation of the firm should be explained by NOI (Net Operating Income Approach) by making an attack on the Traditional Approach.

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:



*Fig.14.6 : The figure shows that the weighted average cost of capital does not make any change (MM hypothesis proposition)*

**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.

**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 perfect 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 equity-holders and debt-holders.

**C. CHECK YOUR PROGRESS**

**Multiple Choice Questions**

**According to Modigliani-Miller (MM) Proposition I (without taxes), the value of a firm:**

- A) Increases with more debt in the capital structure
- B) Decreases if the firm takes on debt
- C) Is independent of its capital structure
- D) Depends only on the debt-equity ratio

**2. Modigliani-Miller Proposition II (without taxes) states that as leverage increases:**

- A) Cost of equity remains constant
- B) Cost of equity decreases
- C) Cost of equity increases
- D) Overall cost of capital increases

**3. When corporate taxes are introduced into the Modigliani-Miller model, what happens to the value of the firm as debt increases?**

- A) It remains unchanged
- B) It decreases
- C) It increases due to the tax shield on interest
- D) It fluctuates randomly

**4. According to MM Proposition II (with taxes), why does the cost of equity increase with leverage?**

- A) Because of the reduced bankruptcy risk
- B) Due to the increased financial risk borne by equity shareholders
- C) Because debt becomes cheaper
- D) Because dividends are tax-deductible

**5. Which of the following is a key assumption of the original Modigliani-Miller capital structure theory (without taxes)?**

- A) Corporate taxes exist
- B) Bankruptcy costs are considered
- C) No transaction or bankruptcy costs and perfect capital markets
- D) Interest on debt is not tax-deductible

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## **14.3 LET US SUM UP**

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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 Modigliani and 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.

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.

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#### 14.4 KEYWORDS

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- **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:** It 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:** It states that a firm's value is maximized when cost of capital is minimized and the value of assets is highest.
  - **Optimal capital structure:** It is the mix of debt, preferred stock, and common stock that maximizes a company's stock price by minimizing its cost of capital

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#### 14.5 SELF ASSESSMENT QUESTIONS

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Q1. Explain assumptions of Capital Structure.

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Q2. What Is Traditional Approach And Net Income Approach?

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Q3. Explain MM hypothesis.

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**14.6 LESSON END EXERCISE**

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1. What do you mean by optimal capital structure?

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2. Explain features of MM Approach.

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**14.7 ANSWER KEY**

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**Check Your Progress A**

C  
B  
C  
A  
B

**Check Your Progress B**

D  
C  
C  
B  
C  
A

**Check Your Progress C**

C  
C  
C

B  
C

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#### **14.8 SUGGESTED READINGS**

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## **LEVERAGES AND CAPITALSTRUCTURE**

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**Lesson No. 15**

**Unit-III (Credit-1)**

**Semester-II**

**MCOMC252**

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### **CRITICAL APPRAISAL OF VARIOUS SOURCES OF FINANCE**

#### **STRUCTURE**

15.0 Learning Objectives and Outcomes

15.1 Introduction

15.2 Critical Appraisal of Various Sources of Finance

15.3 Let Us Sum Up

15.4 Keywords

15.5 Self-Assessment Questions

15.6 Lesson End Exercise

15.7 Answer Key

15.8 Suggested Readings

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## **15.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- to enunciate the securities traded in financial markets
- explain the purpose and types of securities as sources of finance and
- differentiate between shares & debenture.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- understand various sources of finance and
- compare the different sources of finance

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## **15.1 INTRODUCTION**

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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.

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## **15.2 CRITICAL APPRAISAL OF VARIOUS SOURCES OF FINANCE**

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The financial markets are the center 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.

- a. The Organised Sector:** The organised sector contains well-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 of 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 be 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 shares without 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.

### **Difference between Equity shares and Preference shares**

<b>Basis of Difference</b>	<b>Equity Shares</b>	<b>Preference Shares</b>
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.

### **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) Debenture holders do not carry voting rights.
- iv) Ordinarily, debentures are secured. In case the company fails to pay interest on debentures or repay the principal amount, the debenture holders 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 management 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 burden some 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 acompany to trade on equity. But too much of such finance leaves little for share holders, as most of the profits may be required to pay interest on debentures. This brings frustration in the minds of share holders 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.

<b>Bases of differences</b>	<b>shares</b>	<b>Debentures</b>
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 known 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't 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 developmental 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:

- (i) **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.
- (ii) **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.
- (iii) **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.
- (iv) **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.

- (v) **Venture Capital Institutions:** Venture Capital is a form of equity 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 are 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 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..

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**

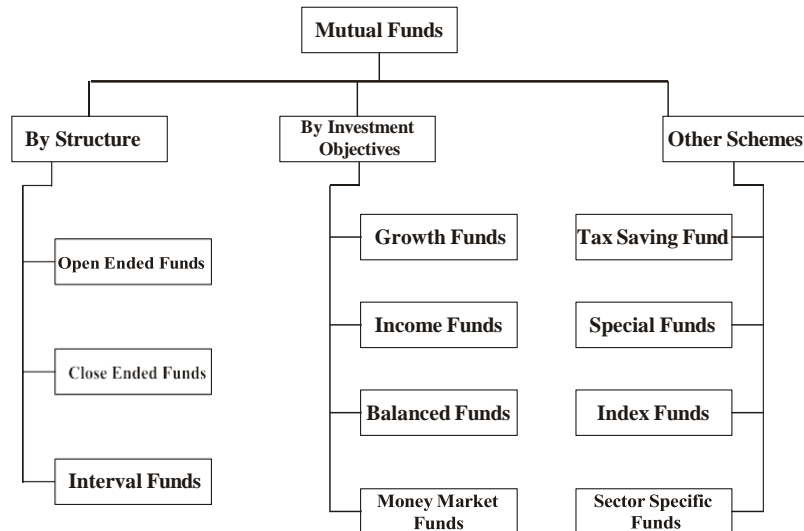
The essential features of mutual funds are as follows:

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 a venue which is ideal for investors seeing a steady income.
3. **Balanced** - This scheme allows investors to enjoy growth and in come at regular intervals. Funds are invested in both equities and fixed income securities; the pro-portion 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

**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.

#### 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.

**1. 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.

**2. 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, midcaps, 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.

#### **1. 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.

#### **2. 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.

### **3. 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.

### **4. 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.

### **5. 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.

### **6. 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.

### **7. 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.

### **1. 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.

### **2. 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.

## **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.

### **Other disadvantages:**

1. Mutual Funds Lack Liquidity
2. No guarantee of returns
3. Diversification of portfolio doesn't maximize returns
4. Selecting right financial securities is not easy
5. 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 seven- ties 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. Foreign 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 have 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 important 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. Mismanagement 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.

## **A. CHECK YOUR PROGRESS**

### **Multiple Choice Questions**

**1. Which of the following is considered a long-term source of finance?**

- A) Trade Credit
- B) Bank Overdraft
- C) Debentures
- D) Bills of Exchange

**2. Equity shares are also known as:**

- A) Preference capital
- B) Owners' capital
- C) Borrowed capital
- D) Debt capital

**3. Which of these is a short-term source of finance?**

- A) Equity Shares
- B) Debentures
- C) Commercial Paper
- D) Retained Earnings

**4. Retained earnings are best described as:**

- A) Funds raised by selling new shares
- B) Profits kept aside for reinvestment in the business
- C) Loans taken from financial institutions
- D) Sale of company assets

**5. Which of the following is a merit of debt financing?**

- A) No obligation to pay interest
- B) Tax-deductibility of interest payments

- C) Dilution of ownership
- D) Permanent capital

**6. Preference shares provide which type of return to investors?**

- A) Fixed rate of interest
- B) Fixed dividend, typically before equity shareholders
- C) Capital appreciation
- D) None of the above

**7. Public deposits are a source of finance where funds are raised from:**

- A) Government
- B) Shareholders
- C) General public for a fixed term at a fixed rate
- D) Banks only

**8. Which of the following sources of finance does not require repayment of capital?**

- A) Bank loan
- B) Equity share capital
- C) Debentures
- D) Lease financing

**Correct Answer: B**

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### **15.3 LET US SUM UP**

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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. Price-earnings 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.

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#### 15.4 KEYWORDS

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- **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.

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### 15.5 SELFASSESSMENT QUESTIONS

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Q1. Define the securities which are traded in financial market?

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2. Elucidate the advantages and disadvantages of mutual funds.

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### 15.6 LESSON END EXERCISE

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Q1. Write detailed note on debentures.

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Q2. Differentiate between shares & debentures.

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Q3. What are the benefits of equity shares to the management ?

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Q4. Describe briefly the disadvantages of retained earnings.

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### 15.7 ANSWER KEY

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Check Your Progress A

C  
B  
C  
B  
B  
B  
C  
B

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## 15.8 SUGGESTED READINGS

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## **DIVIDEND DECISIONS AND WORKING CAPITAL MANAGEMENT**

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**Lesson No. 16**

**Unit-IV (Credit-1)**

**Semester-II**

**MCOMC252**

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### **DIVIDEND DECISIONS- CONCEPT, TYPES AND FACTORS DETERMINING DIVIDEND POLICY; DIVIDEND MODELS- WALTER MODEL, GORDON MODEL AND MM MODEL**

#### **STRUCTURE**

- 16.0 Learning Objectives and Outcomes
- 16.1 Introduction
- 16.2 Meaning of Dividend
- 16.3 Concept of Dividend Policy Decisions
- 16.4 Factors Determining Dividend Policy
- 16.5 Types of Dividend Policy
- 16.6 Dividend Models
- 16.7 Let Us Sum Up
- 16.8 Keywords
- 16.9 Self-Assessment Questions
- 16.10 Lesson End Exercise
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## **16.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- understand the need of dividend decisions in a business?
- comprehend types of dividend and
- explain various dividend models.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- comprehend the theories of dividend
- compare the various theories of dividend.

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## **16.1 INTRODUCTION**

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In this lesson students, you will come to know that once a company makes a profit, it must decide on what to do with those profits. They could continue to retain the profits within the company, or they could pay out the profits to the owners of the firm in the form of dividends. The dividend policy decision involves two questions: 1) What fraction of earnings should be paid out, on average, over time? And, 2) What type of dividend policy should the firm follow? I.e. issues such as whether it should maintain steady dividend policy or a policy increasing dividend growth rate etc.

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## **16.2 MEANING OF DIVIDEND**

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The word “dividend” comes from the Latin word “*dividendum*” (“thing to be divided”). According to the Institute of Chartered Accountants of India, dividend is “a distribution to shareholders out of profits or reserves available for this purpose.”

A dividend is a payment made by a corporation to its shareholders, usually as a distribution of profits. When a corporation earns a profit or surplus, it can either re-invest it in the business (called retained earnings), or it can distribute it to shareholders. A corporation may retain a portion of its earnings and pay the remainder as a dividend. Distribution to shareholders can be in cash (usually a deposit into a bank account) or, if the corporation has a dividend reinvestment plan, the amount can be paid by the issue of further shares or share repurchase. A dividend is allocated as a fixed amount per share, with shareholders receiving a dividend in proportion to their shareholding. For the joint stock company, paying dividends is not an expense; rather, it is the division of after tax profits among shareholders. Retained earnings (profits that have not been distributed as dividends) are shown in the shareholder equity section in the company's balance sheet - the same as its issued share capital. Public companies usually pay dividends on a fixed schedule, but may declare a dividend at any time, sometimes called a special dividend to distinguish it from the fixed schedule dividends. Cooperatives, on the other hand, allocate dividends according to members' activity, so their dividends are often considered to be a pre-tax expense.

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### **16.3 CONCEPT OF DIVIDEND POLICY DECISIONS**

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“Dividend policy determines the ultimate distribution of the firm's earnings between retention (that is reinvestment) and cash dividend payments of shareholders.”

“Dividend policy means the practice that management follows in making dividend payout decisions, or in other words, the size and pattern of cash distributions over the time to shareholders.” In other words, dividend policy is the firm's plan of action to be followed when dividend decisions are made. It is the decision about how much of earnings to pay out as dividends versus retaining and reinvesting earnings in the firm. Dividend policy must be evaluated in light of the objective of the firm namely, to choose a policy that will maximize the value of the firm to its shareholders. The

dividend policy of a company reflects how prudent its financial management is. The future prospects, expansion, diversification mergers are effected by dividing policies and for a healthy and buoyant capital market, both dividends and retained earnings are important factors. As we know in corporation, owners are shareholders but management is done through Board of directors. It is the Board of Directors to decide whether to pay dividend or retain earnings for future projects. It is a matter of conflict between shareholders and directors. Shareholders expect a quick return on their capital. On the other hand, directors have to consider a number of factors in determining divided policy. Most of the company follows some kind of dividend policy. The usual policy of a company is to retain a position of net earnings and distribute the remaining amount to the shareholders. Many factors have to be evaluated before forming a long term dividend policy.

### **WHO MAKES DIVIDEND DECISION?**

The company's Board of Directors makes dividend decisions. They are faced with the decision to pay out dividends or to reinvest the cash into new projects. The tradeoff between paying dividends and retaining profits within the company: The dividend policy decision is a trade-off between retaining earnings v/s paying out cash dividends. Dividend policies must always consider two basic objectives:

1. Maximizing owners' wealth
2. Providing sufficient financing

While determining a firm's dividend policy, management must find a balance between current income for stockholders (dividends) and future growth of the company (retained earnings).

In applying a rational framework for dividend policy, a firm must consider the following two issues:

1. How much cash is available for paying dividends to equity investors, after meeting all needs-debt payments, capital expenditures and working capital (i.e. Free Cash Flow to Equity - FCFE)
2. To what extent are good projects available to the firm (i.e. Return on equity - ROE > Required Return)

### **Dividend Decision Matrix**

Factors	FCFE > Dividends FCFE	FCFE < Dividends
ROE > Cost of Equity	Good Projects Cash flow surplus No Change	Good Projects Decrease Dividends Invest in Projects
ROE < Cost of Equity	Poor Projects Cash flow surplus Increase Dividends Reduce Investment	Poor Projects Cash flow Deficit Decrease Dividends Reduce Investment

### **How do firms view their dividend policies?**

A dividend policy dictates how much cash is returned to shareholders. When deciding what dividend to pay, if any, a company must look at the profits it has made and weigh up how much should be retained in the business to fund future growth and how much should be returned to investors. If it has had a bad year and it doesn't have enough profit to cover its investment needs and the dividend, but expects the poor performance to be a one-off, then it may still make a payout to investors by either dipping into any surplus cash it has or using debt. The dividend policy dictates how the value of the dividend is calculated and when it is paid. It also clarifies who gets what if a business has multiple share classes.

For example, preference shares are usually entitled to dividends before common shareholders while American depositary receipts (ADRs) often earn a different dividend to other investors. Some share classes may not be entitled to dividends at all. Some companies also choose to add what is known as a 'scrip alternative' dividend programme, which allows shareholders to receive the value of their dividends in new shares in the business rather than cash.

In a classic study, **Lintner** surveyed a number of managers in the 1950's and asked how they set their dividend policy. Most of the respondents said that there were a target proportion of earnings that determined their policy. However, dividend policies may vary between various firms as every firm sets its own policy for dividend distribution. Firms may pursue any one of the following dividend policies:

- 1. Generous or liberal dividend policy:** Firms that follow this policy reward shareholders generously by stepping up dividend over the time.
- 2. Stable dividend policy:** Firms may follow the policy of: Stable dividend payout ratio: According to this policy, the percentage of earnings paid out of dividends remains constant. The dividends will fluctuate with the earnings of the company. Stable rupee (inflation adjusted) dividend policy: As per this policy the rupee level of dividends remains stable.
- 3. Low regular dividend plus extra dividend policy:** As per this policy, a low, regular dividend is maintained and when times are good an extra dividend is paid. Extra dividend is the additional dividend optionally paid by the firm if earnings are higher than normal in a given period. Although the regular portion will be predictable, the total dividend will be unpredictable.
- 4. Residual dividend policy:** Under this policy, dividends are paid out of earnings not needed to finance new acceptable capital projects. The dividends will fluctuate depending on investment opportunities available to the company.

**5. Multiple dividend increase policy:** Some firms follow the policy of very frequent and small dividend increases. The objective is to give shareholders an illusion of movement and growth.

**6. Uniform cash dividend plus bonus policy:** Under this policy, the minimum rate of dividend per share is paid in cash plus bonus shares are issued out of accumulated reserves. However, bonus shares are not given compulsorily on an annual basis. They may be given over a period of a certain number of years, for example 3-5 years depending on the accumulated reserves of the company that can be utilized for the purpose of issuing bonus.

**Reliability of dividends:**

Two metrics are commonly used to examine a firm's dividend policy.

*Payout ratio* is calculated by dividing the company's dividend by the earnings per share. A payout ratio greater than 1 means the company is paying out more in dividends for the year than it earned.

*Dividend cover* is calculated by dividing the company's cash flow from operations by the dividend. This ratio is apparently popular with analysts of income trusts in Canada. Dividends are payments made by a corporation to its shareholder members. It is the portion of corporate profits paid out to stockholders.

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## **16.4 FACTORS DETERMINING DIVIDEND POLICY**

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Dividend decision, one of the important aspects of company's financial policy, is not an independent decision. Rather, it is a decision that is taken after considering the various related aspects and factors. There are various factors influencing a firm's dividend policy. For example, some studies suggest that dividend policy plays an important role in determining firm capital structure and agency costs. Many studies have provided arguments that link agency costs with the other financial activities of

a firm. Dividend payout keeps firms in the capital market, where monitoring of managers is available at lower cost. If a firm has *free cash flows*, it is better to share them with shareholders in the form of dividend in order to reduce the possibility of these funds being wasted on unprofitable (negative net present value) project.

### **I. Basic Factors Affecting Dividend Decision**

Theoretically, over the past number of years, it has been believed by the academicians that the dividend decision is influenced by number of factors. Some of the factors that affect the dividend decision of a firm are listed as follows:

**1. Legal provisions:** Indian Companies Act, 1956 has given the guidelines regarding legal provisions as to dividends. Such guidelines are required to be followed by the companies whenever the dividend policy is to be formulated. As per the guidelines, a company is required to transfer a certain percentage of profits to reserves in case the dividend to be paid is more than 10 percent. Further, a company is also required to pay dividend only in cash but only with the exception of bonus shares.

**2. Magnitude of earnings:** Another important aspect of dividend policy is the extent of company's earnings. It serves as the introductory point for framing the dividend policy. This is so because a company can pay dividends either from the current year's profit or the past year's profit. So, if the profits of a company increase, it will directly influence the dividend declaration as the latter may also increase. Thus, the dividend is directly linked with the availability of the earnings with the company.



**3. *Desire of shareholders:*** The decision to declare the dividends is taken by Board of Directors but they are also required to consider the desire of the shareholders, which depend on the latter's economic condition. The shareholders, who are economically weak, prefer regular dividend policy while the rich shareholders may prefer capital gains as compared to dividends. However, it is very difficult for the board to reconcile the conflicting interests of different shareholders yet the dividend policy has to be framed keeping in view the interest of all the interested parties.

**4. *Nature of industry:*** The nature of industry in which a company is operating, influences the dividend decision. Like the industries with stable demand throughout the year are in a position to have stable earnings, thus, should have the stable dividend policy and vice-versa.

**5. *Age of the company:*** A company's age also determine the quantum of profits to be declared as dividends. A new company should restrict itself to lower dividend payment due to saving funds for the expansion and growth as compared to the already existing companies who can pay more dividends. As firms mature, they experience a contraction in their growth which results in a decline in their capital expenditures. Consequently, these firms have more free cash flow to pay as dividends. More mature firms are more likely to pay dividends. In contrast, younger firms need to build up reserves to finance the future growth opportunities, thus, making them to retain the earnings.

**6. *Taxation policy:*** The tax policy of a country also influences the dividend policy of a company. The rate of tax directly influences the amount of profits available to the company for declaring dividends.

**7. *Control factor:*** Yet another factor determining dividend policy is the threat to loose control. If a company declares high rate of dividend, then there is the possibility that a company may face liquidity crunch for which it has to issue new shares, resulting in dilution of control. Keeping this threat in view, a company may go for lower level of dividend payments and more ploughing back of profits in order to avoid any such threat.

**8. *Liquidity position:*** A company's liquidity position also determines the level of dividend. If a company does not have sufficient cash resources to make dividend payment, then it may go for issue of bonus shares.

**9. *Future requirements:*** A company while framing dividend policy should also consider its future plans. If it foresees some profitable investment opportunities in near future then it may go for lower dividend and vice-versa.

**10. *Agency costs:*** The separation of ownership and control results in agency problems. Agency costs can be reduced by distributing dividends. In this stratum, dividends are paid out to stockholders in order to prevent managers from building unnecessary empires to be used in their own interest. In addition, dividends reduce the size of internally generated funds available to managers, forcing them to go to the capital market to obtain external funds (Easterbrook, 1984). As explained in Rozeff (1982), firms with a larger percentage of outside equity holdings are subject to

higher agency costs. The more widely spread is the ownership structure, the more acute the free rider problem and the greater the need for outside monitoring. Hence, these firms should pay more dividends to control the impact of widespread ownership.

**11. Business risk:** Business risk is a potential factor that may affect dividend policy. High levels of business risk make the relationship between current and expected future profitability less certain. Consequently, it is expected that firms with higher levels of business risk will have lower dividend payments. Many researchers argued that the uncertainty of a firm's earnings may lead it to pay lower dividends because volatile earnings materially increase the risk of default. In addition, field studies using survey data (e.g., Lintner, 1956) reported compelling evidence that risk can affect dividend policy. In these surveys, managers explicitly cited risk as a factor that influences their dividend choice.

## **II. Financial Factors Affecting Dividend Decision**

The above mentioned factors are not limited and many more can be there that affect the determination of dividend. Some of the financial factors affecting dividend decisions are:

1. **DPS to Face Value:** This ratio evaluates the relationship between dividend per share and face value of the share. It is calculated as:  
**Dividend Yield ratio= Dividend per share/Face value per share**
2. **DPS to Market Value (Yield ratio):** This ratio evaluates the relationship between dividend per share and market value of the share. It is calculated as:  
**Dividend Yield ratio= Dividend per share/Market value per share**

3. **Dividend Payout Ratio:** It indicates the extent to which the earnings per share have been retained by a company. It enables the company to plough back the profits which will result in more profits in future and hence, more dividends. It is calculated as:

**Dividend Pay-Out Ratio= Dividend per equity share/Earnings per share**

The higher the ratio, lower is the dividend payment and vice-versa.

4. **Current Ratio:** It is a measure of firm's liquidity and is basically used for measuring the short-term financial position or liquidity of the firm. It indicates the ability of the firm to meet its current liabilities. It is calculated as:

**Current Ratio= Current assets/Current liabilities**

A high ratio indicates that firm's liquidity position is good and it has the ability to honor its obligations while a low ratio implies that firm's liquidity position is not so good so as to honor all its obligations. However, a ratio of 2:1 is considered satisfactory. The expected relation between current ratio and dividend payment is positive.

5. **Net Profit Ratio:** This ratio establishes the relation between net profits and sales and indicates the management's efficiency. It is calculated as:

**Net Profit ratio= (Net Profit/Net sales)\* 100**

As dividends are declared from the net profits of a firm, so higher the net profit ratio, higher will be the expected dividend payment.

6. **Net Profit to Net worth:** This ratio indicates the relation between net profits earned by a company and the net worth which is represented by shareholder's capital. It is composed of equity share capital, preference share capital, free

reserves and surpluses, if any. It is also referred to as return on investment and is calculated as:

**Return on shareholder's investment= Net Profit/Net Worth**

This ratio is an indication of company's ability to earn profits. If the earning capacity of the company is more, more dividend payment can be expected and vice-versa.

**7. Debt Equity Ratio:** This ratio measures the claims of outsiders and owners against the firm's assets. It indicates the relation between outsider funds and shareholders funds. It is calculated as:

**Debt-equity ratio= Outsiders funds/Shareholders funds**

This ratio tells the solvency position of the firm. Higher the ratio, better will be the solvency as well as the ability of firm to pay dividends. The vice-versa will hold true in case of low ratio.

**8. Lagged Profits:** The dividend is not only influenced by the past year's dividend but also by the past year's profits. This is so because a company can follow the stable dividend policy if it has sufficient current year's profit or the past year's profit.

**9. Behavior of Share Prices:** The prevailing share prices also influence the dividend payment by a company. If the share prices of a company are unfavorable, then it may increase the dividend in order to boost up the share prices.

**10. Growth in earnings:** If the earnings of a company increase, then the chances of increase in dividend payment are also there. Growth is must for the survival of a company. This ratio can be calculated as:

**Growth in Earnings=  $\frac{EPSt - EPSt-1}{EPSt-1}$**

Where, EPSt= Current earnings per share EPSt-1= Previous earnings per share

11. ***Growth in Working Capital:*** This ratio indicates increase in the working capital of a company.

$$\text{Growth in Working Capital} = \frac{\text{WCt} - \text{WCt-1}}{\text{WCt-1}}$$

Where, WCt= Current working capital WCt-1= Previous working capital

Higher ratio indicates the increase in the capacity of a company to pay dividends but this is interrelated with other factors also. Like, if a company has increase the working capital to match the increased level of operations, then this ratio will not be useful in studying the impact on the dividend payments.

12. ***Lagged Dividends:*** A company may consider the past year's dividend as a benchmark. If a company prefers stability of dividend shares & debentures payments, it may consider the past year's dividend rate and can act accordingly.
13. ***Investment Opportunity Set (Market to Book Value):*** It represents the availability of investment opportunities to the company and generally is believed to have negative relationship with dividend payout.
14. ***Free Cash Flow:*** This variable is used to measure the availability of cash with the company. It is calculated as (Cash flow from Operations-Cash flow from investment activities)/Total assets
15. ***Cash Holdings:*** It is another financial variable to analyse the liquidity position of the firm. It is calculated as  
**(Cash + Short-term investment)/Total assets**
16. ***Solvency Ratio:*** This ratio is a small variant of equity ratio. It indicates the relationship between total liabilities to outsiders to total assets of a firm. It can be calculated as:

**Solvency ratio= Total Liabilities to Outsiders/Total Assets**

17. **Return on Net worth:** This ratio is also termed as return on investment. This ratio indicates the relationship between net profits (after interest and tax) and the shareholders funds. It can be calculated as **Net profit (after interest and taxes)/Shareholders funds**

18. **Return on Capital Employed:** This ratio establishes the relationship between profits and capital employed. It can be calculated as **(Adjusted Net Profits/Gross Capital Employed)\*100**

Or

**(Adjusted Net Profits/Net Capital employed)\*100**

#### **A. CHECK YOUR PROGRESS**

##### **Multiple Choice Questions**

**1. Which of the following is NOT a type of dividend?**

- A) Cash Dividend
- B) Stock Dividend (Bonus Share)
- C) Property Dividend
- D) Interest Dividend

**2. Dividend is usually paid on:**

- A) Preference Share Capital only
- B) Equity Share Capital only
- C) Both Preference and Equity Share Capital as per their terms
- D) Debentures

**3. According to the Walter's Dividend Model, a firm should pay dividends when:**

- A) Return on investment (r) > Cost of equity (Ke)
- B) Return on investment (r) < Cost of equity (Ke)
- C) Return on investment (r) = Cost of equity (Ke)
- D) There's no relation between r and Ke

**4. The portion of net profit not distributed as dividends but retained in the business is called:**

- A) Dividend Payout
- B) Retained Earnings
- C) Preference Dividend
- D) Interim Dividend

**5. Which of the following factors does NOT directly affect a company's dividend decision?**

- A) Profitability of the company
- B) Investment opportunities available
- C) Weather conditions
- D) Liquidity position of the firm

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## **16.5 TYPES OF DIVIDEND POLICY**

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A dividend policy indicates how much cash is returned to shareholders. When deciding what dividend to pay, if any, a company must look at the profits it has made and weigh up how much should be retained in the business to fund future growth and how much should be returned to investors. If it has had a bad year and it doesn't have enough profit to cover its investment needs and the dividend, but expects the poor performance to be a one-off, then it may still make a payout to investors by either dipping into any surplus cash it has or using debt. The dividend policy dictates how the value of the dividend is calculated and when it is paid. It also clarifies who gets what if a business has multiple share classes. For example, preference shares are usually entitled to dividends before common shareholders while American depositary receipts (ADRs) often earn a different dividend to other investors. Some share classes may not be entitled to dividends at all. Some companies also choose to add what is known as a 'scrip alternative' dividend programme, which allows shareholders to receive the value of their dividends in new shares in the business rather than cash. There is



no definitive

Way of forming a dividend policy but there are four main types that are used by most publicly- listed businesses. However, there are additional ways to return cash to shareholders too.

**a. Residual dividend policy**

If a company has a residual dividend policy then it pays whatever cash is left in the business once all expenditure has been taken into account. This means that shareholders receive the sums left after the company has taken the likes of capital expenditure, investment and working capital into account. This is regarded as the most sustainable and logical dividend policy to have as it means a business only pays out what it can afford each year. Although, it does mean that dividend payments can be volatile depending on the performance of the business and its spending requirements: if it suddenly needs to invest more money then there will be less left for are holders, or if it under spends then investors will receive more. A residual dividend policy can be regarded as a form of zero-based budgeting for dividends, with the dividend being reviewed each year from a zero base and justified each year regardless of previous payouts. A residual dividend policy provides greater flexibility to companies compared to other policies, as it puts growth needs and investment before distributions. However, it also means dividends will vary each year depending on how the business has performed.

**b. Stable dividend policy** If a company has a stable dividend policy then it tries to make a consistent payout each year regardless of how the business has performed. Instead of basing the dividend on the company's performance over the short term, stable dividend policies are more closely linked with long-term prospects and forecasts. Ultimately, the policy aims to grow dividends at roughly the same rate as long-term earnings. A common

way for a stable policy to be structured is to use a target payout ratio, which outlines what share of its earnings will be returned to shareholders over the medium to long term. The benefit of a stable dividend policy is that payouts are reliable and consistent, even if the business suffers short-term turmoil. A company will try to honour the dividend even if it has had a bad year, dipping into cash reserves if profits are not enough to cover it, providing something of a safety net for shareholders. However, it may change the policy or rebase the dividend if it believes its sub-par performance will continue for longer. This also means that shareholders won't see a large rise in distributions when the company has a better than expected year either, with companies more likely to retain the cash. A stable dividend policy comes with commitment. Investors expect dividends to remain consistent even if the business enters a downturn, although companies can hoard cash when things aren't as good as they are not obligated to return it to investors.

**c. Progressive dividend policy** If a company commits to a progressive dividend policy then it is pledging to grow the dividend each year. Like stable dividends, the payout is linked to long-term earnings forecast for the business. The main difference is that, if earnings grow, then a progressive policy aims to raise the dividend by a similar amount, but if earnings fall the company will still raise the payout. This is a popular policy for investors as it virtually guarantees higher dividends each year regardless of how the business performs. However, if a company has a progressive payout and is struggling then questions can be raised about how sustainable the policy is and the justification of spraying shareholders with cash if it doesn't have the resources to. A company's share price can find support if it demonstrates an

ability to deliver a progressive payout over a longer period of time but it does severely limit a company's flexibility if Business deteriorates.

**d. Regular dividend policy** A regular dividend policy, also known as a constant dividend policy, sees payouts closely linked to the company's performance, both rising and falling in line with earnings. This often involves setting a payout rate. For example, a payout rate of 20% would mean shareholders will collectively receive 20% of the company's earnings each year, whether that be 20% of a £10,000 profit or 20% of a £10 million profit. The main characteristic of a regular dividend policy is that payouts move in line with earnings: if the company reports a 50% rise in profit then dividends should follow suit, but if they fall 50% then so will the dividend. This means investors reap the reward of a stellar year but also lose out if times have become tough. This can lead to volatile dividends for investors, but it does mean payouts are more sustainable because they are directly linked to earnings, and as the business is committing to a fixed rate of earnings it has more certainty when planning future budgets.

**e. Irregular dividend policies: special dividends** Some companies will pay dividends without adopting a formal dividend policy. Some businesses come into large amounts of cash that they want to return to shareholder without having to promise it will continue making payouts in the future. This can happen if a company sells a valuable asset and books a tidy profit. Similarly, if a business makes a large amount of profit one year but it doesn't expect that to repeat going forward then it may pay a dividend without adopting a policy. There are two primary ways of making a one-off distribution to shareholders. The first is what is known as a 'special dividend'. These

are one-off payments made to shareholders and often made in addition to 'ordinary dividends'. This ensures that the one-off special payout doesn't distort the ordinary dividend policy or raise expectations for the following year. If a special payout was combined with the ordinary one then there is a risk that shareholders will expect an even larger payout the following year, even if the driver of the special payout (such as an asset sale) doesn't repeat. Special dividends are a way of making a one-off return to shareholders, which gives businesses great flexibility. Companies do not usually have a policy for special dividends but some regularly pay them on top of ordinary dividends.

**f. Share buybacks** The another alternative way of making a distribution to shareholders is through a share buyback. A share buyback (also known as a share repurchase programme) involves a company repurchasing its own shares from investors at a pre-determined price, often close to the prevailing share price at the time. This allows a business to reduce the number of shares in issue – raising the value of each share left in the business – rather than just pay investors via a dividend.

Companies often opt for share buybacks if it believes it is undervalued as it allows them to repurchase stock at a cheaper rate and to provide support to shares. Share buybacks have numerous advantages over cash dividends. Share buybacks are usually one-offs, giving businesses flexibility. Repurchasing shares also offsets any dilution that has happened, such as new shares that have been issued to employees. Buybacks can also be used by a company to raise financial leverage as it removes equity from the business.

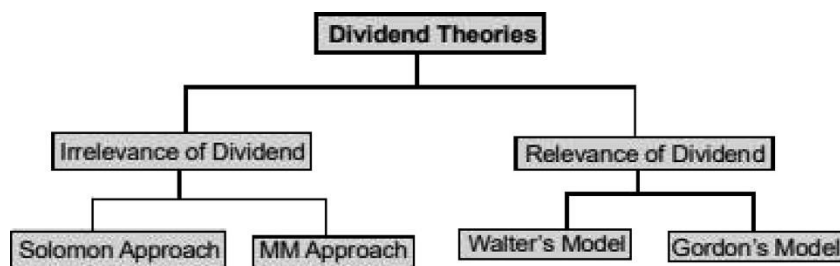
**g. Scrip dividends** It is also worth mentioning scrip dividend programmes, which allow investors to receive new shares in the company rather than a cash payout. A business operating a scrip dividend will give investors the choice of receiving the cash dividend or new shares. The value of the cash dividend is usually higher than the scrip dividend price, but taking new shares is a cost-effective way of increasing your stake in the business and benefit further from future dividends or special Payouts. Scrip dividends, unless countered with a measure like a buyback, do dilute investors by releasing more equity. However, it allows businesses to make a return to shareholders without having to spend any cash. Scrip dividends can also have advantages.

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## 16.6 DIVIDEND MODELS

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Dividend decision of the business concern is one of the crucial parts of the financial manager, because it determines the amount of profit to be distributed among shareholders and amount of profit to be treated as retained earnings for financing its long term growth. Hence, dividend decision plays very important part in the financial management. Dividend decision consists of two important concepts which are based on the relationship between dividend decision and value of the firm.



**Figure : 16.1 Schools of Thoughts**

**A. IRRELEVANCE OF DIVIDEND:** According to professors Solomon, Modigliani and Miller, dividend policy has no effect on the share price of the company. There is no relation between the dividend rate and value of the firm. Dividend decision is irrelevant of the value of the firm. Modigliani and Miller contributed a major approach to prove the irrelevance dividend concept.

• **Solomon Approach**

Residual Theory of dividend policy implies that investors prefer to have the firm retain and reinvest earnings rather than pay them out in dividends, if the return on re-invested earnings exceeds the rate of return.

• **Modigliani and Miller's Model/Approach**

According to MM, under a perfect market condition, the dividend policy of the company is irrelevant and it does not affect the value of the firm. "Under conditions of perfect market, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm's investment policy, its dividend policy may have no influence on the market price of shares". **Assumptions** MM approach is based on the following important assumptions:

- 1. Perfect Capital Markets** - This theory believes in the existence of 'perfect capital markets'. It assumes that all the investors are rational, they have access to free information, there are no flotation or transaction costs and no large investor to influence the market price of the share.
- 2. No Taxes** - There is no existence of taxes. Alternatively, both dividends and capital gains are taxed at the same rate.
- 3. Fixed Investment Policy** - The company does not change its existing investment policy. It means whatever may be the dividend payment, the company will make investment as it has already decided upon. If the company is going to pay more amount of dividend, then it will more equity shares and vice versa.
- 4. No Risk of Uncertainty** - All the investors are certain about the future market prices and the dividends. This means that the same discount rate is applicable for all types of stocks in all time periods. Investor is indifferent between dividend income

and capital gain income - It is assumed that investor is indifferent between dividend income and capital gain income. It means if he requires total return of Rs. 500, he may get Rs. 200 dividend income and Rs. 300 as capital gain income or reverse, in either of the case he gets equal satisfaction.

### **Proof for MM approach**

MM approach can be proved with the help of the following formula:

$$P_0 = \frac{D_1 + P_1}{(1 + K_e)}$$

Where,

P<sub>0</sub> = Prevailing market price of a share. K<sub>e</sub> = Cost of equity capital.

D<sub>1</sub> = Dividend to be received at the end of period one.

P<sub>1</sub> = Market price of the share at the end of period one.

P<sub>1</sub> can be calculated with the help of the following formula.

$$P_1 = P_0 (1 + K_e) - D_1$$

The number of new shares to be issued can be determined by the following formula:

$$M \times P_1 = I - (X - nD_1)$$

Where, M = Number of new share to be issued. P<sub>1</sub> = Price at which new issue is to be made.

I = Amount of investment required.

X = Total net profit of the firm during the period. nD<sub>1</sub> = Total dividend paid during the period.

### **Example 1:**

X Company Ltd., has 100000 shares outstanding the current market price of the shares Rs. 15 each. The company expects the net profit of Rs. 2,00,000



during the year and it belongs to a rich class for which the appropriate capitalisation rate has been estimated to be 20%. The company is considering dividend of Rs. 2.50 per share for the current year. What will be the price of the share at the end of the year

- (i) if the dividend is paid and
- (ii) if the dividend is not paid.

$$P_0 = \frac{D_1 + P_1}{(1 + K_e)}$$

**(i) If the dividend is paid**

$$P_0 = \text{Rs. } 15$$

$$K_e = 20\%$$

$$D_1 = 2.50$$

$$P_1 = ?$$

$$15 = \frac{2.50 + P_1}{1 + 20\%}$$

$$15 = \frac{2.50 + P_1}{1.2}$$

$$2.50 + P_1 = 15 \times 1.2$$

$$P_1 = 18 - 2.50$$

$$P_1 = \text{Rs. } 15.50$$

**(ii) If the dividend is not paid**

$$P_0 = 15$$

$$K_e = 20\%$$

$$D_1 = 0$$

$$P_1 = ?$$

$$15 = \frac{0 + P_1}{1 + 20\%}$$

$$15 = \frac{0 + P_1}{1.20}$$

$$0 + P_1 = 15 \times 1.20$$

$$P_1 = \text{Rs. } 18.$$

### **Criticism of MM approach**

1. MM approach consists of certain criticisms also. The following are the major criticisms of MM approach:
2. MM approach assumes that tax does not exist. It is not applicable in the practical life of the firm.
3. MM approach assumes that, there is no risk and uncertain of the investment. It is also not applicable in present day business life.
4. MM approach does not consider floatation cost and transaction cost. It leads to affect the value of the firm. MM approach considers only single decrement rate, it does not exist in real practice.
5. MM approach assumes that, investor behaves rationally. But we cannot give assurance that all the investors will behave rationally.

**B. RELEVANCE OF DIVIDEND** According to this concept, dividend policy is considered to affect the value of the firm. Dividend relevance implies that shareholders prefer current dividend and there is no direct relationship between dividend policy and value of the firm. Relevance of dividend concept is supported by two eminent persons like Walter and Gordon.

- **Walter's Model**

**Prof. James E. Walter** argues that the dividend policy almost always affects the value of the firm.

Walter model is based in the relationship between the following important factors:

1. Rate of return  $I$
2. Cost of capital ( $k$ )

According to the Walter's model, if  $r > k$ , the firm is able to earn more than what the shareholders could by reinvesting, if the earnings are paid to them. The implication of  $r > k$  is that the shareholders can earn a higher return by investing elsewhere.

If the firm has  $r = k$ , it is a matter of indifference whether earnings are retained or distributed.

### **Assumptions**

Walters model is based on the following important assumptions:

**a) Internal Financing:** All the investments are financed by the firm through retained earnings. In other words, retained earnings are the only source of finance. This means that the company does not rely upon external funds like debt or new equity capital.

**b) Constant IRR and Cost of Capital:** The internal rate of return ( $r$ ) and the cost of capital ( $k$ ) of the firm are constant. The business risks remain same for all the investment decisions.

**c) Constant EPS and DPS:** Beginning earnings and dividends of the firm never change. Though different values of EPS and DPS may be used in the model, but they are assumed to remain constant while determining a value.

**d) 100% Retention or Pay-out:** All the earnings of the company are either reinvested internally or distributed as dividends.

**e) Infinite Life:** The company has an infinite or a very long life. Walter has evolved a mathematical formula for determining the value of market share.

$$P = \frac{D + \frac{r}{K_e}(E - D)}{K_e}$$

Where,

P = Market price of an equity share

D = Dividend per share r = Internal

rate of return E = Earning per share

Ke = Cost of equity capital

### **Example 2:**

From the following information supplied to you, ascertain whether the firm is following an optional dividend policy as per Walter's Model?

Total Earnings	Rs. 2,00,000	
No. of equity shares (of Rs. 100 each 20,000)		
Dividend paid	Rs. 1,00,000	P/E Ratio 10
Return Investment	15%	

The firm is expected to maintain its rate on return on fresh investments. Also find out what should be the E/P ratio at which the dividend policy will have no effect on the value of the share? Will your decision change if the P/E ratio is 7.25 and interest of 10 %?

Solution:

$$\text{EPS} = \frac{\text{Earnings}}{\text{No. of Shares}} = \frac{200000}{20000} = \text{Rs. } 10$$

$$\text{P/E Ratio} = 10$$

$$K_e = \frac{1}{\text{P/E Ratio}} = \frac{1}{10} = 0.10$$

$$\text{DPS} = \frac{\text{Total Dividends paid}}{\text{No. of Shares}}$$

$$= \frac{100000}{20000} = \text{Rs. } 5$$

The value of the share as per Walter's Model is

$$P = \frac{D + r/k_e(E - D)}{K_e}$$

$$= \frac{5 + .15/10(10 - 5)}{0.10}$$

$$= \frac{5 + 7.5}{0.10}$$

$$= \text{Rs. } 12.5$$

$$\text{Dividend Payout} = \frac{\text{DPS}}{\text{EPS}} \times 100$$

$$= \frac{5}{10} \times 100 = 60\%$$

$r > K_e$  therefore by distributing 60% of earnings, the firm is not following an optional dividend policy. In this case, the optional dividend policy for the firm would be to pay zero dividend and the Market Price would be:

$$P = \frac{5 + .15/10(10-0)}{.10}$$

$$= \frac{5 + 15}{.10}$$

$$= \frac{20}{.10}$$

$$P = \text{Rs. } 200$$

So, the MP of the share can be increased by following a zero payout, of the P/E is 7.25 instead of 10 then the  $K_e = 1 = 0.138$  and in this case  $K_e > r$  and the MP of the share is 7.25.

$$\begin{aligned}
 P &= \frac{5 + \frac{.15}{.138} (10-5)}{.138} \cdot .138 \\
 &= 5 + 5.435 \\
 \boxed{P = \text{Rs. } 75.62}
 \end{aligned}$$

### Criticism of Walter's Model

The following are some of the important criticisms against Walter model:

a) Walter model assumes that there is no extracted finance used by the firm. It is not practically applicable.

b) There is no possibility of constant return. Return may increase or decrease, depending upon the business situation. Hence, it is applicable.

c) According to Walter model, it is based on constant cost of capital. But it is not applicable in the real life of the business.

- **GORDON'S MODEL** Myron Gordon suggest one of the popular model which assume that dividend policy of a firm affects its value, and it is based on the following important assumptions:

a) **No Debt:** The model assumes that the company is an all equity company, with no proportion of debt in the capital structure.

b) **No External Financing:** The model assumes that all investment of the company is financed by retained earnings and no external financing is required.

c) **Constant IRR:** The model assumes a constant Internal Rate of Return (r), ignoring the diminishing marginal efficiency of the investment.

**d) Constant cost of capital:** The model is based on the assumption of a constant cost of capital (k), implying the business risk of all the investments to be the same.

**e) Perpetual Earnings:** Gordon's model believes in the theory of perpetual earnings for the company.

**f) Corporate taxes:** Corporate taxes are not accounted for in this model.

**Constant Retention Ratio:** The model assumes a constant retention ratio (b) once it is decided by the company. Since the growth rate (g) = b\*r, the growth rate is also constant by this logic.

**K>g:** Gordon's model assumes that the cost of capital (k) > growth rate (g). This is important for obtaining the meaningful value of the company's share.

Gordon's model can be proved with the help of the following formula:

$$P = \frac{E(1 - b)}{K_e - br}$$

Where,

P = Price of a share

E = Earnings per share

1 – b = D/p ratio (i.e., percentage of earnings distributed as dividends)

K<sub>e</sub> = Capitalization rate

br = Growth rate = rate of return on investment of an all equity firm.

### **Example 3:**

Raja company earns a rate of 12% on its total investment of Rs. 6,00,000 in assets. It has 6,00,000 outstanding common shares at Rs. 10 per share. Discount rate of the firm is 10% and it has a policy of retaining 40% of the earnings. Determine the price of its share

using Gordon's Model. What shall happen to the price of the share if the company has payout of 60% (or) 20%?

Solution: According to Gordon's Model, the price of a share is

$$P = \frac{E(1-b)}{K_e - br}$$

Given: E = 12% of Rs. 10 = Rs. 1.20

r = 12% = 0.12

K = 10% = 0.10

t = 10% = 0.10

b = 40% = 0.40

Put the values in formula

$$P = \frac{1.20(1-.40)}{.10 - (.40 \times .12)}$$

$$= \frac{1.20 \times (0.60)}{.10 - 0.048}$$

$$= \frac{0.72}{0.052}$$

$$= \text{Rs. } 13.85$$



If the firm follows a policy of 60% payout then  $b = 20\% = 0.20$

$$\begin{aligned}\text{The price is } P &= \frac{1.20 (1 \times 0.20)}{.10 - (.2 \times .12)} \\ &= 0.05\end{aligned}$$

$$r = 4\% = 0.04, D = 25\% \text{ of } 10 = 2.50$$

$$\begin{aligned}&= 2.50 + \frac{\frac{0.04}{0.12}(10 - 2.50)}{0.12} \\ &= \frac{5}{0.12} = \text{Rs. } 41.67\end{aligned}$$

If payout ratio is 50%,  $D = 50\%$  of 10 = Rs. 5

$$r = 12\% = 0.12, D = 50\% \text{ of } 10 = \text{Rs. } 5$$

$$\begin{aligned}&= 5 + \frac{\frac{0.12}{0.12}(10 - 5)}{0.12} \\ &= \frac{5 + 5}{0.12} \\ &= \frac{10}{0.12} = \text{Rs. } 83.33\end{aligned}$$

$$r = 8\% = 0.08, D = 50\% \text{ of } 10 = 5$$

$$\begin{aligned}&= \frac{5 + \frac{0.8}{0.12}(10 - 5)}{0.12} \\ &= \frac{5 + 3.33}{0.12} \\ &= \frac{8.33}{0.12} = \text{Rs. } 69.42\end{aligned}$$

$$r = 4\% = 0.04, D = 50\% \text{ of } 10 = 5$$

$$\begin{aligned}&= 5 + \frac{0.04}{0.12}(10 - 5) \\ &= \frac{5 + 1.67}{0.12} \\ &= \frac{6.67}{0.12} = \text{Rs. } 55.58\end{aligned}$$

### Criticism of Gordon's Model

Gordon's model consists of the following important criticisms:

Gordon model assumes that there is no debt and equity finance used by the firm.

It is not applicable to present day business.

$K_e$  and  $r$  cannot be constant in the real practice.

According to Gordon's model, there are no taxes paid by the firm. It is not practically applicable.

Management must also choose the *form* of the dividend distribution, generally as cash. Financial theory suggests that the dividend policy should be set based upon the type of company and what management determines is the best use of those dividend resources for the firm to its shareholders. As a general rule, shareholders of growth companies would prefer managers to have a share buyback program, whereas shareholders of value or secondary stocks would prefer the management of these companies to payout surplus earnings in the form of cash dividends.

## B. CHECK YOUR PROGRESS

### Case Study

**Orion Electronics Ltd.** is a well-established consumer electronics firm. The company has consistently generated stable profits over the past five years and is now considering revising its dividend policy. Currently, the company follows a **fixed dividend payout policy** where it pays **40% of its net profits as dividends**.

Recently, some shareholders have suggested increasing the dividend payout to attract more investors, while the management is debating whether retaining a larger portion of earnings for future investments would be more beneficial.

The company is reviewing this decision in the context of popular **dividend theories**.

### Key Financial Information

- **Net Profit:** ₹10,00,00,000
- **Number of Equity Shares:** 50,00,000
- **Current Market Price per Share:** ₹150
- **Return on Investment (r):** 16%
- **Cost of Equity (Ke):** 12%

### Questions

**Q1.** Based on **Walter's Model**, should Orion Electronics increase or decrease its dividend payout? Justify using the relationship between **r** and **Ke**.

**Q2.** According to the **Gordon's Dividend Growth Model**, how does increasing the dividend payout affect the market price of the share if the company's **return on investment exceeds the cost of equity**?

**Q3.** If Orion follows the **Modigliani-Miller (MM) Dividend Irrelevance Theory**, how would a change in the dividend policy impact the firm's value and shareholder wealth?

**Q4.** Which factors other than dividend theories should Orion consider while making its dividend decision? (e.g., liquidity, future investment opportunities, shareholder preferences)

### Discussion Points

- Should companies prioritize **current income for shareholders** or **reinvestment for growth**?
- How do different dividend theories lead to contrasting recommendations for dividend policy?
- In real-world conditions where taxes, market imperfections, and investor preferences exist — which theory seems most practical?

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## 16.7 LET US SUM UP

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The dividend policy of a company is the decision about the distribution of dividends to its shareholders. A dividend policy is a financial decision that involves deciding on the dividend payout ratio, the frequency of dividends and should they pay dividends at all or not. It is drafted by the company's board of directors and acts as a guideline for distributing dividends to the investors. Dividend decision is essentially a

trade-off between retained earnings and issue of new shares. Dividend decision model helps a firm to make a profitable choice between the two. Dividend decision consists of two important theories which are based on the relationship between dividend decision and value of the firm. The dividend decision of a firm depends on the profits, investment opportunities in hand, availability of funds, industry trends in dividend payment, and the company's dividend payment history. The declaration of dividends involves some legal as well as financial considerations. From the point of legal considerations, the basic rule is that dividend can only be paid out profits without the impairment of capital in any way. But the various financial considerations present a difficult situation to the management for coming to a decision regarding dividend distribution.

Modigliani-Miller have argued that firm's dividend policy is irrelevant to the value of the firm. According to this approach, the market price of a share is dependent on the earnings of the firm on its investment and not on the dividend paid by it. Earnings of the firm which affect its value, further depends upon the investment opportunities available to it. According to Walter's Model, value of the firm depends upon firm's earning level, dividend payout, constant reinvestment rate and the shareholder's expected rate of return. The model suggests that dividend policy of the company depends upon the fact that whether firm has got good investment opportunities or not. If the firm does not have enough investment opportunities then it will pay the dividend otherwise it will retain the money. According to Gordon's Model, Dividend policy of a firm is relevant and can affect the value of a firm. Like Walter's Model value of the firm under this method also depends upon reinvestment rate ( $r$ ) and shareholder's expectations. This is based on the premise that the investors are generally riskaversers and prefer to have current income i.e. dividend. Hence there is a direct relationship between dividend policy and the value of a firm.

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## 16.8 KEYWORDS

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- **Dividends-** Dividends are often part of a company's strategy. However, they are under no obligation to repay shareholders using dividends.
- **Dividend policy-** A dividend policy is the policy a company uses to structure its dividend payout to shareholders.
- **Dividend irrelevance theory:** It infers that dividend payouts minimally affect a stock's price.

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## 16.9 SELFASSESSMENT QUESTIONS

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Q1. Explain meaning and various types of dividend.

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Q2. What are the factors affecting dividend policy decisions?

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Q3. Explain Walter model?

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**16.10 LESSON END EXERCISE**

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Q1. Explain irrelevance model of dividend decisions.

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Q2. What are the different types of working capital?

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Q3. Explain Gordon's model.

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**16.11 ANSWER KEY**

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**Check Your Progress A**

- D
- C
- B
- B
- C

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**DIVIDEND DECISIONS AND WORKING  
CAPITAL MANAGEMENT**

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**Lesson No. 17****Unit-IV (Credit-1)****Semester-II****MCOMC252**

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**WORKING CAPITAL: CONCEPT, NEED AND FACTORS  
INFLUENCING WORKING CAPITAL; OPERATING CYCLE  
APPROACH TO WORKING CAPITAL**

**STRUCTURE**

- 17.0 Learning Objectives and Outcomes
- 17.1 Introduction
- 17.2 Concept of Working Capital
- 17.3 Types of Working Capital
- 17.4 Need for Working Capital
- 17.5 Factors Influencing the Composition of Working Capital
- 17.6 Operating Cycle Approach to Working Capital
- 17.7 Let Us Sum Up
- 17.8 Keywords
- 17.9 Self-Assessment Questions
- 17.10 Lesson End Exercise
- 17.11 Answer Key
- 17.12 Suggested Readings



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## **17.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- understand the concept of working capital in a business
- know about the types of working capital and
- explain various factors affecting working capital.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- apprehend the types of working capital
- analyse the operating cycle approach of working capital and
- identify the significance of working capital.

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## **17.1 INTRODUCTION**

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Dear students, 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 trade-off between profitability and risk associated with a firm's level of current assets and current liabilities, financing-mix strategies and so on.

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## **17.2 CONCEPT OF WORKING CAPITAL**

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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.

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### 17.3 TYPES OF WORKING CAPITAL

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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:

1. **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.

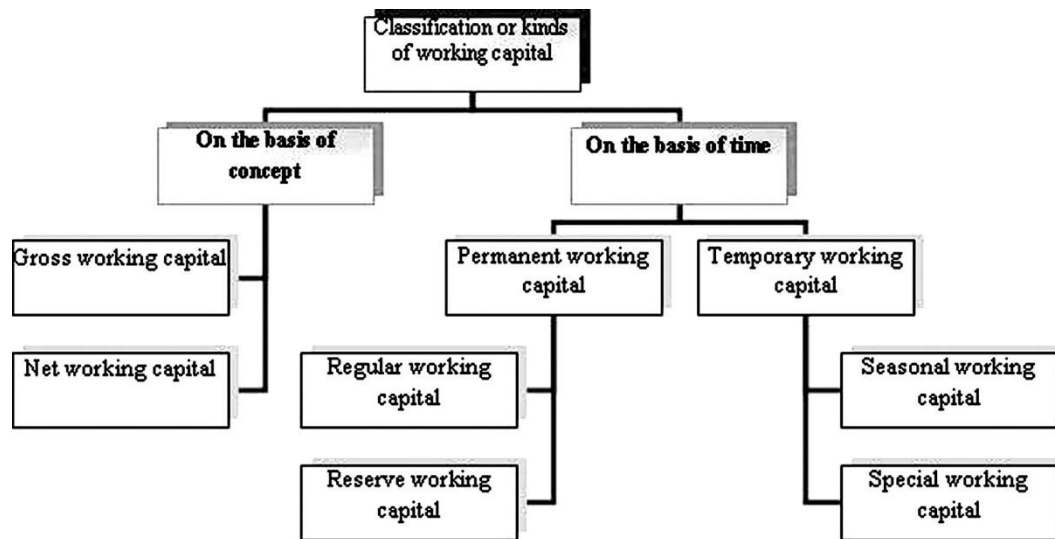
#### **Net working capital = current assets – current liabilities**

Net working capital can be negative or positive. When current assets are more than the current liabilities then working capital is positive and when current assets are less than the current liabilities then 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**

- 1) 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.17.1: Types of working Capital**

### **A. CHECK YOUR PROGRESS**

#### **Multiple Choice Questions**

**1. Which of the following best defines working capital?**

- A) Total assets minus total liabilities
- B) Current assets minus current liabilities
- C) Fixed assets minus long-term liabilities
- D) Total sales minus total expenses

**2. Which of the following is NOT a component of current assets?**

- A) Inventory
- B) Cash and Bank Balances
- C) Debtors
- D) Plant and Machinery

**3. Permanent working capital refers to:**

- A) The minimum level of current assets required throughout the year
- B) Temporary funds raised for seasonal needs
- C) The amount of equity share capital in the firm
- D) Short-term liabilities used to finance long-term assets

**4. Which of the following factors does NOT directly affect the working capital requirement of a firm?**

- A) Nature of business
- B) Production cycle
- C) Market interest rates
- D) Credit policy

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## **17.4 NEED FOR WORKING CAPITAL**

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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.

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## **17.5 FACTORS INFLUENCING THE COMPOSITION OF WORKING CAPITAL**

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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.

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## **17.6 OPERATING CYCLE APPROACH TO WORKING CAPITAL**

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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.

1. Acquisition of resources such as raw materials, labor, power and fuel.
2. Manufacture of the product, which includes conversion of raw materials into Work-in-progress, work-in-progress into finished goods.
3. 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 forecast due 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

$$GOC = RMCP + WIPCP + FGCP + DCP$$

$$RMCP = \frac{\text{Average Stock of Raw materials}}{\text{Raw materials consumption per day}}$$

$$WIPCP = \frac{\text{Average Stock of Work-in-progress}}{\text{Total cost of production per day}}$$

$$FGCP = \frac{\text{Average Stock of Finished Goods}}{\text{Total cost of Sales per day}}$$

$$DCP = \frac{\text{Average Accounts Receivable}}{\text{Net Credit Sales per day}}$$

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,

$$\text{NOC} = \text{GOC} - \text{PDP}$$

Where,

$$\text{PDP} = \frac{\text{Average Payments}}{\text{Net Credit Purchases per day}}$$

$$= \frac{\text{Average Payments}}{360}$$

## **B. CHECK YOUR PROGRESS**

### **True or False**

- 1. Working capital is the difference between current assets and current liabilities.**
- 2. A longer production cycle generally increases the working capital requirement of a firm.**
- 3. Cash, inventory, and debtors are considered part of fixed assets.**
- 4. Seasonal businesses typically require lower working capital during peak seasons.**
- 5. Temporary working capital fluctuates with the level of business activity.**
- 6. A company with a shorter credit policy (less credit to customers) will generally require more working capital.**

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## **17.7 LET US SUM UP**

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Working capital is the life blood 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 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 realizing a 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 short-term 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. 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. 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.

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## 17.8 KEYWORDS

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- **Working capital:** The excess of current assets over current liabilities.
- **Working capital management:** Aggregation of total current assets & current liabilities.
- **Gross working capital:** Aggregation of total current assets is called gross working capital.

- **Net working capital :** The difference between current assets minus current liabilities.
- **Current assets:** Current assets are those assets which will be converted into cash within one year without undergoing a diminutions 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.

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## 17.9 SELFASSESSMENT QUESTIONS

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Q1. Explain meaning and various concepts of working capital ?

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Q2. What are the different types of working capital ?

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Q3. Explain the composition of working capital ?

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**17.10 LESSON END EXERCISE**

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Q1. Why working capital is required in business?

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Q2. What are the factors influencing the composition of working capital?

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Q3. Explain operating cycle approach to working capital ?

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Q4. What is the debtor conversion period (DCP) ?

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## 17.11 ANSWER KEY

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### Check Your Progress A

B  
D  
A  
C

### Check Your Progress B

True  
True  
False  
False  
True  
False

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## 17.12 SUGGESTED READINGS

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- Banerjee, B. (2015). *Fundamentals of financial management*. PHI Learning Pvt. Ltd.
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**DIVIDEND DECISIONS AND WORKING  
CAPITAL MANAGEMENT**

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**Lesson No. 18**

**Unit-IV (Credit-1)**

**Semester-II**

**MCOMC252**

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**INVENTORY MANAGEMENT: CONCEPT, TYPES**

**STRUCTURE**

- 18.0 Learning Objectives and Outcomes
- 18.1 Introduction
- 18.2 Concept of Inventory Management
- 18.3 Nature of Inventory and its Role in Working Capital
- 18.4 Types and Cost of Inventory
- 18.5 Types of Inventory Management
- 18.6 Let Us Sum Up
- 18.7 Keywords
- 18.8 Self-Assessment Questions
- 18.9 Lesson End Exercise
- 18.10 Answer Key
- 18.11 Suggested Readings

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## **18.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- various types of inventories and its role in working capital
- techniques involved in inventory management
- purpose of inventory in managing the working capital and
- challenges of inventory faced by the business

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- apprehend the types of inventories
- analyse the techniques of inventory and identify the significance of inventory management.

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## **18.1 INTRODUCTION**

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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.

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## **18.2 CONCEPT OF INVENTORY MANAGEMENT**

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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.

1. **Manage & Understand your Customer Demand:** If this is inaccurate then you will end up with either over or under supply. Both scenarios bring their own respective challenges!
2. **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”
3. **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.

4. **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.

5. **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 e.g. just in time inventory policies and others.

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### **18.3 NATURE OF INVENTORY AND ITS ROLE IN WORKING CAPITAL**

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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.

### **A. CHECK YOUR PROGRESS**

#### **Multiple Choice Questions**

**1. Which of the following is NOT a type of inventory in a manufacturing company?**

- A) Raw Materials
- B) Work-in-Progress (WIP)
- C) Finished Goods
- D) Bank Loan

**2. The main objective of inventory management is to:**

- A) Maximize inventory levels
- B) Minimize investment in inventory while ensuring availability
- C) Increase holding costs
- D) Avoid sales

**3. Which of the following techniques is used for inventory control based on the value of inventory items?**

- A) LIFO
- B) FIFO
- C) ABC Analysis
- D) EOQ



**4. EOQ stands for:**

- A) Easy Order Quantity
- B) Economic Order Quantity
- C) Equal Order Quantity
- D) Essential Order Quantity

**5. The cost incurred due to placing an order for inventory is called:**

- A) Carrying Cost
- B) Ordering Cost
- C) Stock-out Cost
- D) Holding Cost

**6. In inventory management, the stock level at which a new order should be placed to avoid stock-outs is called:**

- A) Maximum Level
- B) Minimum Level
- C) Reorder Level
- D) Average Stock

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## **18.4 TYPES AND COSTS OF INVENTORY**

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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

**Other costs include**

- 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. Whereas 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 and 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 providers. For one thing the organizations find that managing inventory operations requires certain core competencies, which may not be in line 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.

**c. Shortage or stock out cost and cost of Replenishment:** Stock out cost represents the loss of income and additional expense resulting from inventory shortage. For example, if a business runs out of stock for a particular time but information is not updated on time in your stock, so orders continue to process. The customer is then notified about the out of stock items later and offered a refund. The business then has to bear the cost of refund and losing on sale.

Inventory procurement, storage and management is associated with huge costs associated with each these functions.

Inventory costs are basically categorised into three headings:

4. Ordering Cost
5. Carrying Cost
6. Shortage or stock out Cost & Cost of Replenishment

**Other costs include**

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- b. Cost of logistics
- c. Sales discounts, volume discounts and other related costs.

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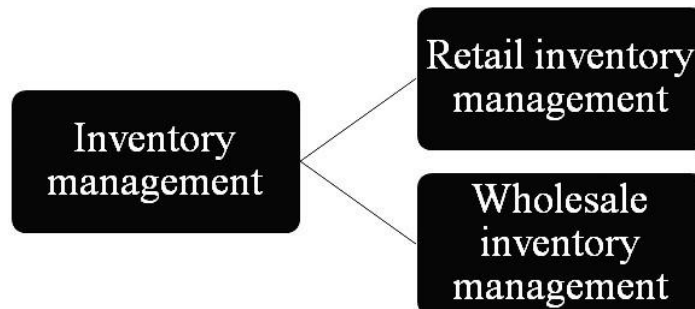
c. **Shortage or stock out cost and cost of Replenishment:** Stock out cost represents the loss of income and additional expense resulting from inventory shortage. For example, if a business runs out of stock for a particular time but information is not updated on time in your stock, so orders continue to process. The customer is then notified about the out of stock items later and offered a refund. The business then has to bear the cost of refund and losing on sale.

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## 18.5 TYPES OF INVENTORY MANAGEMENT

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Inventory management is the process of managing inventory levels, physical location, pricing, and movement to ensure that all items are available for sale at the proper time. An effective inventory management system will track critical information about your products, including availability, price, quantity on hand, cost value, and product lifecycle status. The following are the two types of inventory management



### **a) Retail inventory management**

Retail inventory management refers to the act of monitoring the supply and demand of products in stock. Businesses in retail, such as grocery stores and clothing shops, must maintain accurate records of their product inventories so that they may adequately replenish stock when needed. The success or failure of a retail organization depends significantly on its ability to manage its inventory effectively.

### **b) Wholesale inventory management**

Wholesale inventory management is a tedious process that involves keeping track of the movement of goods, ensuring that warehouses are well-stocked, and managing product returns. Thus, we have to manage our stock across multiple locations. Because of these challenges, many retailers rely on wholesale supply chain management software to simplify their processes.

## **B. CHECK YOUR PROGRESS**

### **Case Study**

**Zenith Furniture Ltd.** is a mid-sized furniture manufacturing company based in India. The company deals in premium office and home furniture. Over the past year, the management noticed frequent stockouts of certain fast-moving products and excess stock of slow-moving items, leading to increased storage costs and lost sales.

To address this, the company decided to review its **inventory management system** and implement modern inventory control techniques.

### **Key Inventory Data**

- **Annual Demand for office chairs:** 10,000 units
- **Ordering Cost per order:** ₹2,500
- **Carrying Cost per unit per year:** ₹100
- **Lead Time:** 10 days
- **Working Days in a Year:** 300 days

### **Questions for Discussion**

**Q1.** Calculate the **Economic Order Quantity (EOQ)** for office chairs using the given data.

**Q2.** What would be the **Reorder Level** for office chairs if the lead time is 10 days?

**Q3.** How can techniques like **ABC Analysis** and **Just-in-Time (JIT)** help Zenith Furniture improve its inventory management?

**Q4.** What are the possible consequences of poor inventory management for Zenith Furniture Ltd. in terms of costs and customer satisfaction?

### **Learning Points**

- Understanding how **EOQ and Reorder Level** help maintain optimum stock levels
- Recognizing the importance of **inventory control techniques like ABC Analysis and JIT**
- Linking inventory decisions with **cost control and customer service**

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## **18.6 LET US SUM UP**

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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.



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## 18.7 KEYWORDS

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- **Inventory:** The value of unsold goods is called stocks or Inventory
- **Lead time:** It refers to the time normally taken in receiving the delivery after placing orders with the suppliers
- **Safety Stocks:** It implies extra stock that can be drawn down when actual lead time are greater than expected.

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## 18.8 SELFASSESSMENT QUESTIONS

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Q1. Describe meaning & concepts of Inventory?

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Q2. Determine the purpose of Inventory?

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Q3. Explain nature and role of inventory in working Capital?

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## 18.9 LESSON END EXERCISE

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Q1. Write a detailed note on inventory management.

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Q2. Discuss the ABC and VED techniques of inventory management.

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### 18.10 ANSWER KEY

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#### Check Your Progress A

D  
B  
C  
B  
B  
C

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### 18.11 SUGGESTED READINGS

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- Banerjee, B. (2015). *Fundamentals of financial management*. PHI Learning Pvt. Ltd.
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**DIVIDEND DECISIONS AND WORKING  
CAPITAL MANAGEMENT**

**Lesson No. 19**

**Unit-IV (Credit-1)**

**Semester-II**

**MCOMC252**

**TECHNIQUES OF INVENTORY MANAGEMENT,  
CASH MANAGEMENT**

**STRUCTURE**

- 19.0 Learning Objectives and Outcomes
- 19.1 Introduction
- 19.2 Inventory Costs
- 19.3 Techniques of Inventory Management
  - 19.3.1 ABC Analysis of Inventory Management
  - 19.3.2 Demand and Supply of Inventory Management
  - 19.3.3 Economic Order Quantity
- 19.4 Cash Management Concept
- 19.5 Motives for Holding Cash
- 19.6 Techniques of Cash Management
- 19.7 Let Us Sum Up
- 19.8 Keywords
- 19.9 Self-Assessment Questions
- 19.10 Lesson End Exercise
- 19.11 Answer Key
- 19.12 Suggested Readings

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## **19.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- understand techniques involved in inventory management
- purpose of holding cash and
- challenges of cash management.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- understand the ABC and EOQ technique
- analyse the significance of cash management and
- identify the reasons for holding cash.

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## **19.1 INTRODUCTION**

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Inventories constitute the most significant part of current assets of a large majority of companies in India. On an average, inventories are approximately 60 percent of current assets in public limited companies in India. Because of the large size of inventories maintained by firms, a considerable amount of funds is required to be committed to them. It is, therefore, absolutely imperative to manage inventories efficiently and effectively in order to avoid unnecessary investment. A firm neglecting the management of inventories will be jeopardizing 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 company's profitability.

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## 19.2 INVENTORY COSTS

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In making any decision that affects inventory size, the following costs must be considered:

1. **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.

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## **19.3 TECHNIQUES OF INVENTORY MANAGEMENT**

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### **19.3.1 Techniques of Inventory Management are mentioned below:**

#### **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 form 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.

**19.3.2 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 statutory 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. If 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 known 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.

### 19.3.3 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

$$EOQ = \sqrt{2 \times \text{Quantity} \times \text{Cost Per Order} / \text{Carrying Cost Per Order}}$$

#### *Example 19.1*

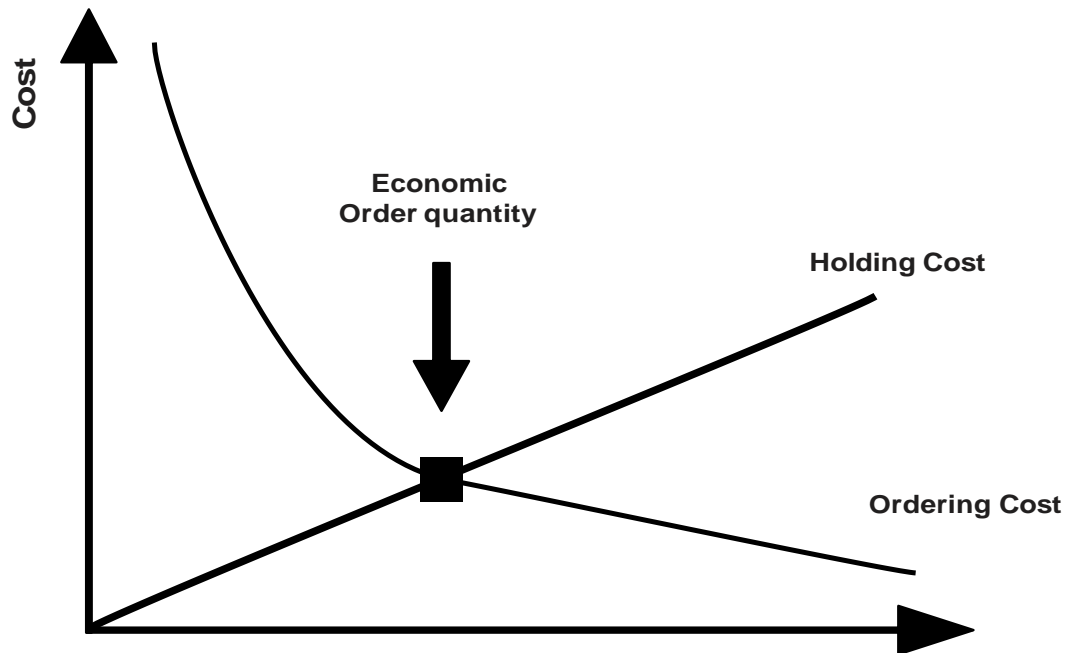
ABC Ltd. is engaged in sale of footballs. Its cost per order is \$400 and its carrying cost unit is \$10 per unit per annum. The company has a demand for 20,000 units per year. Calculate the order size, total orders required during a year, total carrying cost and total ordering cost for the year.

### ***Solution***

$$\text{EOQ} = \text{SQRT} (2 \times 20,000 \times 400/10) = 1,265 \text{ units}$$

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.  $632.5 \times \$10$ ).



## Quantity

**Fig 19.1: Economic order quantity**

### **A. CHECK YOUR PROGRESS**

#### **Multiple Choice Questions**

**1 ☐ ABC analysis is based on the principle of:**

- A) Equal importance to all inventory items
- B) Classification of items based on their usage value
- C) First In, First Out method
- D) Random selection of stock

**2 ☐ In ABC analysis, 'A' category items typically:**

- A) Are low-value and low-usage items
- B) Make up a small percentage of items but a large percentage of value
- C) Make up most of the inventory items and value
- D) Are not monitored closely

**3 Which of the following is a benefit of ABC analysis?**

- A) Equal control on all inventory items
- B) Focused control on high-value items
- C) Reduces carrying costs of all items equally
- D) Eliminates the need for stock control

**4 In ABC analysis, which category typically consists of the largest number of items but contributes the least to total inventory value?**

- A) A category
- B) B category
- C) C category
- D) None of the above

**5 The primary objective of EOQ is to:**

- A) Maximize total inventory costs

- B) Minimize the total of ordering and carrying costs
- C) Increase inventory turnover
- D) Eliminate ordering costs

**6 Which of the following is NOT a factor considered in the EOQ formula?**

- A) Ordering cost per order
- B) Carrying cost per unit per year
- C) Cost of goods sold
- D) Annual demand

**7 If the ordering cost decreases while other factors remain constant, the EOQ will:**

- A) Increase
- B) Decrease
- C) Remain unchanged
- D) Become zero

**8 The EOQ model assumes:**

- A) Variable demand and lead time
- B) Constant demand and constant lead time
- C) No ordering cost
- D) Unlimited storage capacity

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## **19.4 CASH MANAGEMENT CONCEPT**

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Cash management is usually required by a group to carry out three classic missions:

1. Monitor the cash situation: forecasting the evolution of current receipts and payments;
2. Manage the cash balance: making up cash deficits at the lowest cost and investing excess cash with the best return and an acceptable degree of risk;
3. Conduct risk management for liquidity, rates and exchange.

However, cash missions take on an entirely different dimension, the

Cash Management team being specifically responsible for:

4. Monitoring the cash positions of the Group and its subsidiaries;
5. 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;
6. 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:

7. By making all the company heads and senior staff in the Group aware of the “cash-effect” induced by any investment or management decision,
8. Through the ongoing improvement of procedures for circulating information on accounting and finance,
9. 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:

10. Working out its financial strategies through proposals in the short, medium and long term for raising capital, portfolio optimisation, etc.,
11. Managing acquisition operations,
12. Overall management of the relations between the Group and its bank partners, notably in the choice of partners, negotiating conditions, integrating computer relations, etc.;
13. 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 financial flows in various currencies and manage exchange risks, i.e.

14. Forecasting cash out flows and inflows for the companies in the Group;
15. Managing these flows and liquidities, including export debts;
16. 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).

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## 19.5 MOTIVES FOR HOLDING CASH

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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.

1. **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.
2. **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.
3. **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.

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## 19.6 TECHNIQUES OF CASH MANAGEMENT

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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.

## **B. CHECK YOUR PROGRESS**

### **Multiple Choice Questions**

**1 The primary objective of cash management is to:**

- A) Maximize cash holding
- B) Minimize cash balance
- C) Maintain optimum cash balance to meet business needs
- D) Eliminate all cash expenses

**2 Which of the following is NOT a motive for holding cash as per Keynes' theory?**

- A) Transaction motive
- B) Speculative motive

- C) Precautionary motive
- D) Depreciation motive

**3 The technique used to estimate the firm's future cash requirements is known as:**

- A) Cash Budget
- B) Trial Balance
- C) Ledger Balancing
- D) Profit & Loss Account

**4 Which of the following is a cash inflow for a business?**

- A) Purchase of machinery
- B) Payment of salaries
- C) Issue of shares
- D) Payment to creditors

**5 Which of the following models is used for determining optimum cash balance for a firm?**

- A) EOQ Model
- B) Baumol's Model
- C) ABC Analysis
- D) Break-even Analysis

**6 A firm faces the risk of cash shortage when:**

- A) Cash inflows exceed cash outflows
- B) Cash outflows exceed cash inflows
- C) Cash balance remains constant
- D) Sales increase

**7 Which of these would NOT generally be considered while preparing a cash budget?**

- A) Credit sales
- B) Depreciation
- C) Cash purchases
- D) Cash collections from debtors

**8 The speculative motive for holding cash is aimed at:**

- A) Meeting regular day-to-day transactions
- B) Taking advantage of unexpected investment opportunities
- C) Keeping cash as a safety measure
- D) Paying taxes and dividends

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**19.7 LET US SUM UP**

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Finally dear learners, 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.”

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**19.8 KEYWORDS**

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- **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

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## 19.9 SELFASSESSMENT QUESTIONS

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After reading this chapter students must be able to answer following questions:

Q1. What is Inventory Cost?

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Q2. What are the various techniques of Inventory management?

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Q3. What are the challenges of Inventory Management?

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**19.10 LESSON END EXERCISE**

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Q1. Explain ABC analysis of inventory management.

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Q2. Difference between re-order level and re-order quantity.

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**19.11 ANSWER KEY**

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**Check Your Progress A**

B  
B  
B  
C  
B  
C  
B  
B

**Check Your Progress B**

C  
D  
A  
C  
B  
B  
B  
B

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**19.12 SUGGESTED READINGS**

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## **DIVIDEND DECISIONS AND WORKING CAPITAL MANAGEMENT**

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**Lesson No. 20**

**Unit-IV (Credit-1)**

**Semester-II**

**MCOMC252**

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### **RECEIVABLES MANAGEMENT; CRITICAL APPRAISAL OF SHORT TERM SOURCES OF FINANCE**

#### **STRUCTURE**

- 20.0 Learning Objectives and Outcomes
- 20.1 Introduction
- 20.2 Concept of Receivables Management
- 20.3 Factors Affecting Size of Receivables
- 20.4 Critical Appraisal of Short Term Sources of Finance
- 20.5 Let Us Sum Up
- 20.6 Keywords
- 20.7 Self-Assessment Questions
- 20.8 Lesson End Exercise
- 20.9 Answer Key
- 20.10 Suggested Reading

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## **20.0 LEARNING OBJECTIVES AND OUTCOMES**

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### **Learning Objectives**

The objective of this lesson is to enable the students to:

- identify the reasons for holding cash
- understand the importance receivables management;
- Express understanding of earnings management;
- explain the meaning of receivables management and
- determine costs of maintaining debtors.

### **Learning Outcomes**

After completing this lesson student will be in a position to:

- Enumerate reasons that companies use earnings management;
- understand the various credit terms and credit standards;
- define credit analysis.

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## **20.1 INTRODUCTION**

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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.

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## **20.2 CONCEPT OF RECEIVABLES MANAGEMENT**

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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.”

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### **20.3 FACTORS AFFECTING SIZE OF RECEIVABLES**

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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.



## **A. CHECK YOUR PROGRESS**

### **Multiple Choice Questions**

**1 ☐ The primary objective of receivables management is to:**

- A) Increase credit sales without limit
- B) Minimize investment in receivables while maximizing sales and profit
- C) Eliminate all credit sales
- D) Maximize inventory levels

**2 Which of the following is NOT a cost associated with maintaining receivables?**

- A) Collection cost
- B) Bad debts cost
- C) Ordering cost
- D) Capital cost

**3 The period between the date of sale and the date of collection of payment is called:**

- A) Inventory period
- B) Payable period
- C) Average collection period
- D) Discount period

**4 A liberal credit policy generally leads to:**

- A) Lower sales and lower receivables
- B) Higher sales and higher receivables
- C) No effect on sales or receivables
- D) Lower bad debts

**5 Which of the following tools is commonly used to monitor and control receivables?**

- A) Cash Budget
- B) Ageing Schedule
- C) EOQ Model
- D) ABC Analysis

**6 Which of the following would most likely increase a firm's receivables?**

- A) Shortening the credit period
- B) Offering cash discounts
- C) Extending the credit period
- D) Tightening credit standards

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**20.4 CRITICAL APPRAISAL OF SHORT TERM SOURCES OF FINANCE**

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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 sub-markets, each one dealing in different types of short term credits. The most important sources and components of the money market are:

Call money market

Treasury Bill market

Commercial Bill market

Commercial paper market

Certificate of Deposits

**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 draws 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.

### **(a) 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.

### **(b) 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 tapping 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.

### **(c) 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.

### **(d) 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.

## **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'.

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 bill 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 vacation 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 adhoc 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.

### **(a) 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.

### **(b) 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.

### **(c) Categorisation of treasury bills**

The treasury bills can be categorised as follows:



- i.) 14 days Treasury bills
- ii.) 28 days Treasury bills
- iii.) 91 days Treasury bills
- iv.) 182 days Treasury bills
- v.) 364 days Treasury bills

**i.) 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.

**ii.) 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.

**iii.) 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 rediscounting fee was imposed from November 1986, in case the banks 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.

**iv.) 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.

**v.) 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.

#### **(d) 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.
- l. 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.

### **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.

### **(a) 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.

**a. 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.

**b. 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.

- c. **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.
- d. **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.
- e. **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.
- f. **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.

Supply 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 of getting advances from commercial banks by creating a charge on these bills.

### **(b) 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:

- 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.



### **(c) 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 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.
- h. **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.

### **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 provisional 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.

**(a) 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.
- l. 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.

#### **(b) 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.

### (c) 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.

### 20.5.2 (d) 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.

### **(e) 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.

**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 bank's 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 unsecured 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.

#### **(a) 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 deposit is subject to stamp duty like usance of promissory notes.



### **(b) 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.

### **(c) 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.

## **B. CHECK YOUR PROGRESS**

### **Multiple Choice Questions**

**1 ☐ Which of the following is a long-term source of finance?**

- A) Trade Credit
- B) Bank Overdraft
- C) Equity Shares
- D) Commercial Paper

**2 Debentures are a type of:**

- A) Ownership security
- B) Short-term finance
- C) Loan or borrowed capital
- D) Internal source of finance

**3 Retained earnings can be categorized as:**

- A) External source of finance
- B) Internal source of finance
- C) Debt capital
- D) Public deposit

**4 Which of the following is NOT a short-term source of finance?**

- A) Trade Credit
- B) Commercial Paper
- C) Public Deposits (for 7 years)
- D) Bank Overdraft

**5 The primary advantage of equity financing is:**

- A) Fixed interest payment
- B) No obligation to repay capital
- C) Reduces ownership dilution
- D) Higher financial risk

**6 Which of the following sources of finance is raised by pledging or hypothecating assets?**

- A) Equity shares
- B) Bank loan
- C) Retained earnings
- D) Debentures

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## **20.5 LET US SUM UP**

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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.

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## 20.6 KEYWORDS

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- **Bazar reports:** Reports about the applicant can be obtained from the various markets, particularly from businessmen carrying on the same trade.
- **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.

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## 20.7 SELFASSESSMENT QUESTIONS

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- Q1. What do you understand by Receivables Management? Discuss the factors which influence the size of receivables?

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Q2. What should be the considerations in forming a credit policy?

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Q3. What are the benefits of short term sources of finance?

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Q4. Discuss the various aspects or dimensions of receivable management?

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Q5. Write short note on Credit Terms.

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## 20.8 LESSON END EXERCISE

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Q1. 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.

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Q2. Explain the terms a) Credit policy and b) Credit analysis.

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Q3. Describe the various techniques of inventory management.

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## 20.9 ANSWER KEY

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### Check Your Progress A

B  
C  
C  
B  
B  
C

### Check Your Progress B

C  
C  
B  
C  
B  
B

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