PERIYAR UNIVERSITY

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Salem - 636011, Tamilnadu, India.

CENTRE FOR DISTANCE AND ONLINE EDUCATION (CDOE)

MASTER OF BUSINESS ADMINISTRATION (MBA)

SEMESTER - II

CORE – XI : FINANCIAL MANAGEMENT

(Candidates admitted from 2024 onwards)

PERIYAR UNIIVERSITY

CENTRE FOR DISTANCE AND ONLINE EDUCATION (CDOE)

2024 admission onwards

Core: Financial Management

Prepared By:

CENTRE FOR DISTANCE AND ONLINE EDUCATION (CDOE),
Periyar University, Salem – 636 011.

Syllabus	
Unit 1	Introduction: Financial management: Definition and scope – objectives of Financial Management – Profit Maximization - wealth maximization - functions and role of finance manager. Sources of finance – short term – Long term – International Financial Management- Financial Planning- Behavioural Finance- Capital Market- Money Market- Micro Finance- Financial Information System.
Unit 2	Capital Budgeting Process – Techniques of Investment Appraisal: Pay Back Period; Accounting Rate of Return, Time Value of Money- DCF Techniques –Net Present Value, Profitability Index and Internal Rate of Return- Problems - Introduction to Fintech – Digital Currency – Cryptocurrency.
Unit 3	Cost of specific sources of capital – Cost of equity capital – Cost of debt – Cost of preference – Cost of retained earnings - weighted average cost of capital. EBIT -EPS Analysis –Leverages.
Unit 4	Factors influencing capital structure – optimal capital structure - capital structure theories – Net Income Approach – Net Operating Income (NOI) Approach – Modigliani - Miller(MM) Approach – Traditional Approach – Practical Problems. Dividend and Dividend policy: Meaning, classification - Dividend policy general, determinants of dividend policy.
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FINANCIAL MANAGEMENT

UNIT -1

Financial Management

Introduction: Financial management: Definition and scope – objectives of Financial Management – Profit Maximization - wealth maximization - functions and role of finance manager. Sources of finance – short term – Long term – International Financial Management- Financial Planning- Behavioral Finance- Capital Market- Money Market- Micro Finance- Financial Information System.

Unit Module Structuring

1. Financial management
2. Sources of finance
3. International Financial Management
4. Capital Market- Money Market- Financial Information System

Unit Objectives :

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

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Module -1

Introduction to Financial management:

1.1Finance :

Finance is the life blood of business. Finance may be defined as the art and science of managing money. Finance also is referred as the provision of money at the time when it is needed. Finance is the procurement of funds and their effective utilizationin business concerns.

The term financial management has been defined by Solomon, “it is concerned with the efficient use of an important economic resource namely, capital funds. The most popular and acceptable definition of financial management as given by S.C. Kuchal is that “Financial Management deals with procurement of funds and their effective utilization in the business. Financial management is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations. Thus, Financial Management is mainly concerned with the effective funds management in the business.

Financial management is that activity of management which is concerned with the planning, procuring and controlling of the firm’s financial resources. It means applying general management principles to financial resources of the institutions. Financial activities of an institutions are one of the most important and complex activities of a firm. Therefore, in order to take care of all the important finical functions of an organisation. The person in charge should maintain a far sightedness in order to ensure that the funds are utilized in the most efficient manner. His actions directly affect the profitability growthand goodwill of the firm.

The scope and coverage of financial management have undergone fundamental changes over the last half a century. During 1930s and 1940s, it was concerned of raising adequate funds and maintaining liquidity and sound financial structure. This is known as the “Traditional Approach” to procurement and utilization of funds required by a firm. Thus, it was regarded as an art and science of raising and spending of funds. The traditional approach emphasized the acquisition of funds and ignored efficient allocationand constructive use of funds. It does not give sufficient attention to the management of working capital

During 1950s, the need for most profitable allocation of scare capital

resources was recognised. During 1960s, and 1970s many analytical tools and concepts like funds flow statement, ratio analysis, cost of capital, earning per share, optimum capital structure portfolio theory etc., were emphasized. As a result, a broader concept of finance began to be used. Thus, the modern approach to finance emphasizes the proper allocation and utilization of funds in addition to their economical procurement. Thus, business finance is defined as "the activity concerned with the planning, raising, controlling and administering of funds used in the business.

1.2 Definition of Financial Management

Financial management is an integral part of overall management. It is concerned with the duties of the finical managers in the firm.

The most popular and acceptable definition of financial management as given by

S.C. Kuchalis that "Financial management deals with procurement of funds and their effective utilization in the business

"Financial management is the activity concerned with planning, raising, controlling and administering of funds used in the business."- **Guthman and Dougal**

"Financial management is that area of business management devoted to a judicious use of capital and a careful selection of the source of capital in order to enable a spending unit to move in the direction of reaching the goals. - **J.F. Brandley**

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

1.3 Financial management involves:

- **Financial Planning**: Developing a comprehensive plan outlining financial goals and strategies to achieve them. It involves assessing the current financial position, setting objectives, and creating action plans.
- **Budgeting:** Creating budgets that allocate financial resources to different activities and projects. Budgets help in controlling spending, prioritizing investments, and monitoring financial performance.

- **Cash Flow Management**: Managing the inflow and outflow of cash to ensure sufficient liquidity for operational needs, debt repayment, and investments. Cash flow management involves forecasting, monitoring, and optimizing cash flow to maintain financial stability.
- **Investment Decisions:** Evaluating various investment opportunities and choosing themost suitable ones based on their potential returns, risks, and alignment with financial goals. It involves analyzing investment options, conducting risk assessments, and diversifying portfolios.
- **Risk Management:** Identifying and mitigating financial risks that may impact an individual or organization. Risk management involves assessing risks, implementing strategies to minimize or transfer them, and maintaining adequate insurance coverage.

- **Financial Analysis:** Analyzing financial statements, ratios, and other financial data to evaluate the financial health and performance of an individual or organization. Financial analysis helps in making informed decisions, identifying areas for improvement, and assessing the profitability and efficiency of operations.

- **Capital Structure Management**: Determining the optimal mix of debt and equity financing to fund operations and investments. It involves evaluating different sources of capital, assessing their costs and risks, and maintaining an appropriate capital structure.

- **Ethical Considerations**: Adhering to ethical standards and principles in all financial management activities. This includes transparency, integrity, and accountability in financial reporting, decision-making, and interactions with stakeholders

Effective financial management enables individuals and organizations to make informed decisions, allocate resources efficiently, mitigate risks, and achieve financial stability and growth. It plays a crucial role in maximizing wealth, optimizing profitability, and ensuring long-term financial sustainability.

1.4 Scope of Financial Management

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

Traditional Approach:

The traditional approach to the scope of financial management primarily focused on the procurement and allocation of funds within an organization. It emphasized the role of financial management in ensuring adequate funds for operations, managing working capital, and making investment decisions. The key areas of the traditional approach include:

- **Procurement of Funds:** This involves identifying and securing the necessary funds from various sources such as equity, debt, and retained earnings to meet the organization's financial requirements.

- **Allocation of Funds**: Once the funds are procured, the traditional approach focuses on allocating them to different projects, departments, or activities based on their priority and potential return on investment.

- **Management of Working Capital:** The traditional approach gives significant importance to managing the working capital components, including cash, inventory, and receivables, to ensure smooth operations and meet short-term obligations.

- **Capital Budgeting:** It involves evaluating and selecting investment proposals that maximize the value of the organization. The traditional approach emphasizes techniqueslike payback period and accounting rate of return in making investment decisions.

- **Profit Maximization:** The traditional approach often prioritizes profit maximization as the primary objective of financial management. It focuses on

utilizing financial resourcesin a manner that generates the highest possible profits for the organization.

1.5 Modern Approach

The modern approach to the scope of financial management takes a broader view and incorporates additional dimensions beyond the traditional focus on procurement and allocation of funds. It recognizes the evolving business environment and the need financial management to adapt to new challenges and opportunities. The key areas of themodern approach include :

- **Strategic Financial Management:** The modern approach emphasizes the integration of financial management with overall strategic planning. Financial decisions are aligned with the organization's strategic objectives and long-term sustainability.

- **Risk Management:** The modern approach recognizes the importance of identifying, assessing, and managing financial risks. It includes strategies for managing market risks, credit risks, operational risks, and other potential threats to financial stability.

- **Value Creation:** Rather than focusing solely on profit maximization, the modern approach emphasizes the creation of long-term shareholder value. Financial decisions are evaluated based on their impact on the organization's value and the interests of stakeholders.

- **Financial Technology (Fintech):** The modern approach acknowledges the role of technology in transforming financial management practices. It includes leveraging financial technology tools and platforms for tasks such as financial analysis, cash flow management, and financial reporting.

- **Sustainability and Corporate Social Responsibility (CSR):** The modern approach considers the environmental, social, and governance (ESG) aspects of financial management. It includes integrating sustainability goals, ethical considerations, and social responsibility into financial decision-making.

- **International Financial Management:** With globalization, the modern approach recognizes the need for financial management to address the challenges and opportunities of operating in a global marketplace. It includes managing foreign exchangerisks, international investments, and cross-border transactions.

The modern approach to the scope of financial management reflects a more comprehensive and strategic view of financial decision-making, taking into account the evolving business landscape and the broader responsibilities of organizations towards sustainability and stakeholder interests.

1.6 Objectives of Financial Management

The objectives of financial management can vary depending on the specific situation and the goals of the individual or organization. However, there are several common objectives that financial management aims to achieve:

- **Profit Maximization**: One of the primary objectives of financial management is to maximize profits. This involves generating revenue and controlling costs to achieve a higher level of profitability.
- **Wealth Maximization**: Financial management aims to maximize the wealth of shareholders or owners. It focuses on increasing the overall value of the organization bymaking decisions that enhance the long-term financial health and sustainability of the company.

- **Optimal Utilization of Funds:** Financial management seeks to ensure the efficient and effective utilization of financial resources. It involves allocating funds to different projects, departments, or investments in a way that maximizes returns and minimizes costs.

- **Cash Flow Management**: Financial management aims to maintain a healthy cash flowposition. It involves managing the inflow and outflow of cash to ensure that there is sufficient liquidity to meet financial obligations and support operational needs.
- **Risk Management:** Financial management focuses on identifying and managing financial risks. This includes assessing and mitigating risks associated with

investments,market fluctuations, credit, liquidity, and operational factors.

- **Growth and Expansion:** Financial management plays a role in facilitating the growth and expansion of an organization. It involves making strategic financial decisions that support business growth, such as funding new projects, acquiring assets, or entering newmarkets.
- **Financial Stability:** Financial management aims to maintain the financial stability of the organization. It involves managing financial resources in a way that ensures the organization's solvency, liquidity, and ability to meet its financial obligations.
- **Shareholder Value:** Financial management seeks to enhance shareholder value. It involves making decisions that increase the value of the organization's shares, such as implementing effective capital structure strategies and dividend policies.
- **Cost Control:** Financial management aims to control costs and ensure efficient use of resources. It involves analyzing and managing expenses to optimize profitability and minimize wasteful spending.
- **Compliance and Governance:** Financial management strives to ensure compliance with financial regulations and good governance practices. It includes maintaining accurate financial records, preparing reliable financial statements, and adhering to legal and ethical standards.

These objectives of financial management collectively contribute to the overall financial health, growth, and success of an individual or organization. They guide decision-making processes and help in achieving financial stability, maximizing wealth, and creating long-term value.

1.7 Profit Maximization

Profit maximization is one of the traditional objectives of financial management. It refers to the goal of maximizing the profits of a company or organization. Profit is the excess of revenues over expenses, and maximizing profit involves increasing the difference between the two. Here are some key points regarding profit maximization in financial management:

- **Revenue Generation:** Financial management focuses on strategies and actions that generate higher revenues for the organization. This includes increasing sales, expanding market share, improving pricing strategies, and identifying new revenue streams.

- **Cost Control:** Financial management aims to minimize expenses and optimize the utilization of resources. It involves managing costs across various functional areas, suchas production, procurement, marketing, and administration.

- **Pricing Decisions:** Financial management plays a role in determining the pricing of products or services. It involves considering factors such as production costs, market demand, competition, and customer value to set prices that maximize profitability.

- **Efficiency and Productivity:** Financial management focuses on enhancing operational efficiency and productivity. This includes streamlining processes, improving resource allocation, reducing waste, and enhancing overall operational effectiveness.

- **Profit Margin Analysis:** Financial management involves analyzing and monitoring profit margins to identify areas for improvement. It includes assessing gross profit margin, operating profit margin, and net profit margin to evaluate the profitability of different business units or product lines.

- **Investment Decisions:** Financial management considers the profitability of investment opportunities. It involves evaluating potential investments based on their expected returns and risks to make informed decisions that contribute to profit maximization.
- **Financial Planning:** Financial management encompasses creating financial plans and budgets that align with profit objectives. It includes setting financial targets, developing action plans, and monitoring progress towards profitability goals.

- **Risk Management:** Financial management incorporates risk management practices to protect profitability. It involves identifying and mitigating risks that could negatively impact the organization's financial performance.

It is important to note that while profit maximization is traditionally considered a primary objective of financial management, modern approaches also emphasize other factors such as long-term sustainability, shareholder value, and corporate social responsibility. Therefore, profit maximization should be balanced with these broader considerations to ensure the overall success and ethical conduct of an organization.

1.8 Wealth maximization

Wealth maximization is a broader and more modern objective of financial management that focuses on increasing the overall wealth of shareholders or owners of a company. It recognizes that the goal of financial management should not be limited to short-term profit maximization but should consider the long-term value and sustainability of the organization. Here are some key points regarding wealth maximization in financialmanagement:

- **Shareholder Value:** Financial management aims to enhance shareholder value by making decisions that increase the wealth of shareholders. Shareholders' wealth is reflected in the market value of the company's shares.

- **Long-Term Perspective:** Wealth maximization takes a long-term perspective rather than focusing solely on immediate profits. It considers the impact of financial decisions on the organization's value and sustainability over time.
- **Time Value of Money:** Financial management recognizes the time value of money, which means that a dollar received in the future is worth less than a dollar received today. It involves evaluating investment opportunities based on their ability to generate higher returns in the future.

- **Risk-Return Tradeoff:** Wealth maximization considers the tradeoff between risk and return. Financial management aims to identify and pursue investment opportunities that offer an optimal balance between risk and expected returns.

- **Capital Structure Decisions:** Financial management analyzes the optimal capital structure of the organization, which includes the mix of debt and equity used to finance operations. It considers the cost of capital and strives to minimize the overall cost of financing while maximizing the value of the organization.

- **Dividend Policy:** Financial management determines the dividend policy that maximizes shareholder wealth. It involves evaluating the distribution of profits to shareholders through dividends and retaining earnings for reinvestment in the company.

- **Stakeholder Considerations:** Wealth maximization takes into account the interests of various stakeholders, including employees, customers, suppliers, and the broader community. Financial management considers the impact of decisions on these stakeholders and aims to create sustainable value for all.

Earnings Quality: Financial management focuses on maintaining high-quality earnings by ensuring accurate financial reporting and transparency. This helps build investor confidence and enhances the long-term value of the organization.

Overall, wealth maximization in financial management goes beyond short-term profit maximization and encompasses a broader perspective that considers long-term value creation, risk management, stakeholder interests, and sustainable growth. By aiming to maximize shareholder wealth, financial management strives to ensure the long-term success and prosperity of the organization.

1.9 Functions of Financial Manager

Financial managers perform various functions in financial management to ensure the effective and efficient management of an organization's financial resources. These functions encompass a wide range of activities and responsibilities. Here are the key functions of financial managers:

- **Financial Planning:** Financial managers are responsible for developing financial plans and strategies that align with the organization's goals and objectives. They assess the organization's financial position, analyze market trends, and forecast

future financial needs. Financial planning involves setting financial targets, identifying investment opportunities, and determining the optimal allocation of resources.

- **Budgeting:** Financial managers play a crucial role in the budgeting process. They develop and manage budgets, which involve estimating revenues, forecasting expenses, and allocating resources to different departments or projects. Budgeting helps in monitoring financial performance, controlling costs, and ensuring that financial resourcesare utilized efficiently.

- **Capital Budgeting:** Financial managers evaluate investment opportunities and make decisions on capital expenditures. They analyze potential projects, assess their financial feasibility, and determine their impact on the organization's overall financial position. Capital budgeting involves assessing the risk and return of investment alternatives and selecting projects that maximize shareholder value.

Financing Decisions: Financial managers are involved in making decisions related tothe organization's financing structure. They assess different sources of funding, such asdebt or equity, and determine the optimal capital structure. Financial managers also negotiate with lenders, issue securities, and manage relationships with financial institutions to secure the necessary funds for the organization's operations andinvestments.

- **Risk Management:** Financial managers identify, assess, and manage financial risks that could impact the organization's financial performance. They develop risk management strategies and policies to mitigate risks such as market risks, credit risks, liquidity risks, and operational risks. Financial managers also monitor compliance with regulations and ensure that appropriate risk management practices are in place.
- **Cash Flow Management:** Financial managers are responsible for managing the organization's cash flow. They ensure that the organization has sufficient liquidity to meetits short-term obligations and operational needs. Cash flow management involves monitoring cash inflows and outflows, optimizing working capital, and implementing cashmanagement techniques to maintain a healthy cash position.

- **Financial Analysis and Reporting:** Financial managers analyze financial data and prepare financial reports that provide insights into the organization's financial performance. They assess financial ratios, key performance indicators, and financial statements to evaluate the organization's profitability, liquidity, solvency, and efficiency. Financial managers also communicate financial information to stakeholders, such as investors, management, and regulatory authorities.
- **Strategic Financial Management:** Financial managers contribute to the organization's strategic decision-making process. They provide financial insights and analysis to supportstrategic initiatives, evaluate investment opportunities, and assess the financial impact of various business decisions. Financial managers also participate in strategic planning, mergers and acquisitions, and other strategic projects.

- **Stakeholder Management:** Financial managers interact with various stakeholders, including shareholders, investors, lenders, and regulatory authorities. They communicatefinancial performance, investment plans, and risk management strategies to stakeholders. Financial managers also build and maintain relationships with stakeholders, ensuring transparency and effective communication

10.Compliance and Governance: Financial managers ensure compliance with financial regulations, accounting standards, and corporate governance practices. They stay updated on changes in financial regulations and implement internal controls to safeguardassets, prevent fraud, and maintain accurate financial records. Financial managers also participate in audits and provide financial information to external auditors.

These functions highlight the diverse roles and responsibilities of financial managers in financial management. They are responsible for strategic financial planning,budgeting, risk management, financial analysis, and ensuring compliance with financial regulations, all aimed at optimizing the organization's financial performance and maximizing shareholder value.

1.10 Role of Financial Manager

The role of a financial manager in financial management is multifaceted and encompasses a wide range of responsibilities. Financial managers are responsible for overseeing the financial operations of an organization and making strategic decisions to ensure its financial well-being. Here are some key roles and responsibilities of financial managers:

- **Financial Planning and Analysis:** Financial managers are involved in developing financial plans, budgets, and forecasts. They analyze financial data, market trends, and business performance to provide insights and recommendations for strategic financial planning.

- **Capital Budgeting**: Financial managers evaluate investment opportunities and determine the allocation of capital among different projects or initiatives. They assess the financial viability of investment proposals, analyze potential risks and returns, and make decisions on resource allocation.

- **Financing Decisions:** Financial managers determine the most appropriate sources and methods of financing for the organization's operations and capital projects. They assess the organization's capital structure, evaluate debt and equity financing options, and negotiate with lenders or investors.

- **Risk Management:** Financial managers identify, assess, and manage financial risks to protect the organization's assets and financial stability. They develop risk management strategies, such as hedging against market risks, implementing internal controls, and ensuring compliance with regulatory requirements.

- **Cash Flow Management:** Financial managers monitor and manage the organization's cash flow to ensure sufficient liquidity for day-to-day operations and financial obligations. They develop cash flow forecasts, implement cash management techniques, and optimize working capital to maintain a healthy cash position.

- **Financial Reporting and Compliance:** Financial managers oversee the preparation and presentation of financial statements and reports in compliance with accounting standards and regulatory requirements. They ensure accurate and timely financial reporting, maintain internal controls, and communicate financial information tostakeholders.

- **Financial Analysis and Performance Evaluation:** Financial managers analyze financial data and performance metrics to assess the organization's financial health andperformance. They interpret financial ratios, conduct financial analysis, and provide insights to support decision-making and improve business performance.

8.Strategic Financial Management: Financial managers play a key role in strategic planning and decision-making processes. They provide financial insights, conduct feasibility studies, assess the financial impact of strategic initiatives, and contribute to thedevelopment and implementation of the organization's overall strategic goals.

- **Treasury Management:** Financial managers are responsible for managing the organization's treasury function, including cash management, investment strategies, and risk management. They monitor capital markets, make decisions regarding short-term investments, manage foreign exchange transactions, and optimize the organization's financial resources.

- **Stakeholder Management:** Financial managers interact with various stakeholders, including shareholders, lenders, investors, and regulatory authorities. They communicate financial performance, investment opportunities, and risk management strategies to stakeholders, maintain relationships, and ensure transparent and effective communication.

Overall, financial managers play a crucial role in ensuring the financial health and success of an organization. They provide financial expertise, analysis, and strategic guidance to support decision-making, manage risks, optimize resources, and maximize shareholder value.

LETS SUM UP

Financial Management is broadly concerned with the acquisition and use of funds by a business firm. Investment decisions are essentially made after evaluating the different project proposals with reference to growth and profitability projections of the company. Financing decisions are concerned with the determination of how much funds to procure from amongst the various avenues available i.e. the financing mix or capital structure. Dividend decision is to decide whether the firm should distribute all profits or retain them or distribute a portion and retain the balance. It has been traditionally argued that the objective of a company is to earn profit. This means that the finance manager has to make decision in a manner that the profit is maximized. The alternative to profit maximization is wealth maximization. This is also known as Value maximization or Net Present Worth maximization.

MULTI CHOICE QUESTIONS

1. Basic objective of Financial Management is _____.

A.Maximization of profit. **B.Maximization of share holder's wealth**

C.Ensuring Financial discipline in the firm. D.All of these.

2. Financial structure refers to _____.

A.Short-term resources. **B.All the financial resources.**

C.Long-term resources. D.All of these.

3. .Which of the following statements is correct regarding profit maximization as the primary goal of the firm?

A. Profit maximization considers the firm's risk level.

B. Profit maximization will not lead to increasing short-term profits at the expense of lowering expected future profits.

C. Profit maximization does consider the impact on individual shareholder's EPS.

D. Profit maximization is concerned more with maximizing net income than the stock price.

4. Objective of financial management is:

A. profit maximization **B. wealth maximization**

C. assets maximization D. Sales maximization

5. What is not a part of Investment decision in financial management ?

A. Dividend Payout decision **B. Working Capital Management**

C. Capital Budgeting Decisions D. Payable Management

Module -2

SOURCES OF FINANCE

2.1 Introduction to Sources of Finance

In financial management, organizations often require short-term financing to meettheir immediate funding needs and manage their day-to-day operations. These short-term financial sources provide temporary capital and are typically repaid within one year or less. Here are some common short-term financial sources:

- **Trade Credit:** Trade credit is an arrangement where suppliers allow organizations to purchase goods or services on credit, with a specified period for repayment. It provides ashort-term financing solution without incurring immediate interest costs. The terms of trade credit, such as the credit period and discount for early payment, vary based on the agreement between the organization and the supplier.
- **Bank Overdraft:** A bank overdraft is a short-term financing option where the bank allows an organization to withdraw funds from its account, exceeding the available balance. It provides flexibility in managing cash flow fluctuations and immediate funding needs. Interest is charged on the overdraft amount utilized, typically based on the outstanding balance and the agreed-upon interest rate.
- **Short-Term Bank Loans:** Organizations can obtain short-term loans from banks to fulfill their immediate funding requirements. These loans have a fixed repayment period, usually within a year. The interest rates and terms vary depending on the creditworthiness of the organization and the specific loan agreement.
- **Revolving Credit Facilities:** Revolving credit facilities provide a line of credit that organizations can draw upon as needed. It allows them to borrow and repay funds multiple times within an agreed-upon limit. Interest is charged on the

outstanding balance, and organizations have the flexibility to manage their short-term financing needs.

- **Commercial Paper:** Commercial paper is a short-term unsecured promissory note issued by corporations to raise funds. It typically has a maturity period of less than 270 days. Commercial paper is often utilized by large, creditworthy organizations with established market presence. It is usually sold at a discount and provides a cost-effectivesource of short-term financing.

- **Factoring:** Factoring involves selling accounts receivable to a third-party financial institution, known as a factor, at a discount. The factor provides immediate funds to the organization, typically a percentage of the accounts receivable value, and assumes the responsibility of collecting the receivables. Factoring helps organizations improve cash flow by converting their receivables into immediate cash, albeit at a discount.
- **Inventory Financing:** Organizations can use their inventory as collateral to secure short-term financing. Lenders provide loans or lines of credit based on the value of the inventory. This type of financing is particularly useful for organizations with substantial inventory levels, such as retailers or manufacturers.
- **Supplier Financing:** Supplier financing, also known as vendor financing or supplier credit, involves negotiating extended payment terms with suppliers. This allows organizations to delay payment for goods or services received, thereby freeing up cash for other short-term needs. Supplier financing can be an effective way to manage cash flow and improve working capital.
- **Crowdfunding:** Crowdfunding platforms also offer short-term financing options for organizations. Through these platforms, organizations can raise funds from a large number of individuals or investors who contribute small amounts. Crowdfunding campaigns typically have a defined timeline and provide a quick source of short-term funds.

Each source of short-term financing has its advantages and considerations, and organizations may choose to utilize a combination of sources based on their specific requirements. It is important to carefully assess the costs, terms, and implications of eachfinancing option before making a decision.

Bank Sources

Banks are a crucial source of finance in financial management. They provide a range of financial services and products to individuals, businesses, and organizations. Here are some key ways in which banks serve as a source of finance in financial management:

Loans and Credit Facilities: Banks offer various types of loans and credit facilities tofinance the needs of businesses. These may include short-term loans, long-term loans working capital loans, equipment financing, and project financing. The terms and conditions of loans, such as interest rates, repayment schedules, and collateral requirements, are determined based on the borrower's creditworthiness and the purposeof the loan.

- **Overdraft Facilities**: Banks provide overdraft facilities that allow businesses to withdraw more funds from their accounts than the available balance. Overdrafts provide short-term financing to manage cash flow fluctuations or meet immediate funding needs.Interest is charged on the overdrawn amount.

- **Lines of Credit:** Banks offer lines of credit to businesses, which provide a pre-approved credit limit that can be utilized as and when needed. Businesses can draw funds from the line of credit to meet short-term financing requirements. Interest is charged on the amount utilized, and businesses have the flexibility to repay and redraw funds withinthe credit limit.

- **Trade Finance:** Banks facilitate trade finance by providing services such as letters of credit, bank guarantees, and documentary collections. These services help businesses manage the financial aspects of international trade, including import and export transactions. Banks provide financing for trade activities, ensuring smooth and secure transactions.

- **Working Capital Financing:** Banks assist businesses in managing their working capital needs. They provide financing options to cover day-to-day operational expenses,manage inventory, and fund accounts receivable. Banks offer working capital loans, overdraft facilities, and other forms of credit to help businesses maintain liquidity and meettheir short-term obligations.

5.Asset-Based Financing: Banks can provide financing against assets such as accounts receivable, inventory, and property. For example, accounts receivable financing, also known as factoring, allows businesses to sell their receivables to the bank

- **6. Trade Credit and Payment Services**: Banks facilitate trade credit by providing payment services such as letters of credit, bank drafts, and electronic fund transfers. These services enable businesses to make and receive payments both domestically and internationally. Banks ensure the secure and efficient transfer of funds, enhancing the liquidity and financial management of businesses.

- **Financial Advisory Services:** Banks often offer financial advisory services to businesses, assisting them in making informed financial decisions. This may include advice on capital structure, investment opportunities, risk management, and strategic financial planning. Banks provide expertise and guidance to help businesses optimize their financial management practices.

- **Cash Management Services:** Banks offer cash management services to businesses, helping them effectively manage their cash flows, collections, and disbursements. These services may include automated cash handling, cash pooling, liquidity management, andcash flow forecasting. Banks provide tools and solutions to optimize cash utilization and enhance financial management efficiency.
- **Investment Banking Services:** Banks with investment banking divisions can assistbusinesses in raising capital through equity offerings, debt issuances, initial public offerings (IPOs), and mergers and acquisitions. Investment banks provide advice, underwriting services, and access to the capital markets, facilitating the financial growth and strategic objectives of businesses.

Long –Term sources

In financial management, organizations require long-term sources of finance to fund their capital investments, expansion plans, and ongoing operations. Long-term sources of finance typically have a maturity period of more than one year and provide funds for extended periods. Here are some common long-term sources of finance:

- **Equity Financing:** Equity financing involves raising capital by issuing ownership shares in the organization. This can be done through the sale of common stock or preferred stock. Equity investors become shareholders and have ownership rights in theorganization. Equity financing provides funds without the obligation of repayment but dilutes existing shareholders' ownership.

- **Debt Financing:** Debt financing involves borrowing funds from lenders or financial institutions with the commitment to repay the borrowed amount along with interest over an extended period. Common forms of long-term debt financing include bank loans, corporate bonds, and debentures. Debt financing allows organizations to maintain ownership control but requires regular interest payments and repayment of principal.

- **Retained Earnings:** Retained earnings are the profits that organizations reinvest into the business rather than distributing them to shareholders as dividends. Accumulated over time, retained earnings serve as an internal source of long-term finance. Organizations can utilize retained earnings to fund capital projects, research and development, acquisitions, and other long-term investments.

4.Venture Capital and Private Equity: Start-ups and high-growth companies often seek long-term financing from venture capital firms and private equity investors. These investors provide capital in exchange for ownership stakes and actively participate strategic decision-making. Venture capital and private equity financing are typically usedfor early-stage businesses or those with high growth potential.

5. Bank Loans: Banks offer long-term loans to businesses for financing capital expenditures and expansion plans. These loans have a fixed repayment period, often extending beyond one year. The terms and conditions, such as interest rates, collateral requirements, and repayment schedules, are determined based on the borrower's creditworthiness and the purpose of the loan.

- **Lease Financing:** Lease financing allows organizations to utilize assets such as equipment, machinery, or property without purchasing them outright. By entering into lease agreements, organizations can access and utilize assets for an extended period while making regular lease payments. Lease financing can be an attractive option for acquiring capital assets without incurring a large upfront cash outlay.

- **Government and Institutional Loans:** Governments and various institutions provide long-term financing programs, loans, and grants to support specific industries, research projects, infrastructure development, and social initiatives. These sources may offer favorable terms, interest rates, or subsidies to promote economic growth and development.

- **Export-Import Financing:** Organizations engaged in international trade can utilize export-import financing options such as export-import loans, export credit insurance, and export-import guarantees. These financing options provide long-term funding and risk mitigation for businesses involved in cross-border transactions.

- **Public Offerings:** Public offerings, such as initial public offerings (IPOs), allow organizations to raise capital by selling shares to the public. By listing their shares on stock exchanges, organizations can attract long-term investment from individual and institutional investors. Public offerings provide access to equity financing and can significantly enhance the organization's financial resources.

It is important for organizations to carefully evaluate the costs, terms, and implications of each long-term financing option. The choice of long-term finance sourcesshould align with the organization's financial objectives, risk tolerance, and capitalstructure considerations.

2.2 Shares

- **Ownership Stakes**: Shares in financial management refer to ownership stakes or stocks issued by companies operating in the financial management industry.

- **Financial Services:** These companies provide services such as investment management, financial planning, wealth management, asset allocation, and related advisory services.
- **Investment Opportunity:** Investing in shares of financial management companies can provide exposure to the financial services sector and potential growth and profitability.
- **Ownership Benefits:** Shareholders of financial management companies are entitled to a portion of the company's profits and assets.
- **Range of Companies:** The financial management sector encompasses various companies specializing in different areas, such as mutual funds, hedge funds, private wealth management, and more.
- **Research and Analysis:** Before investing in shares of financial management companies, thorough research is essential, including analyzing the company's financial health, reputation, management team, and competitive position.
- **Consider External Factors:** Factors like regulatory environment, market conditions, and overall economic trends can impact the performance of financial management companies.
- **Diversification**: It is recommended to diversify investment portfolios and seek advice from financial advisors or professionals to align investments with individual financial goals and risk tolerance.Investing in shares of financial management companies carries risks, and potential investors should carefully assess their investment objectives and seek professional advice accordingly.

2.3 Debentures

Debentures are a type of debt instrument issued by companies to raise funds from the public or institutional investors. They are essentially loans taken by companies, and the individuals or entities that invest in debentures become creditors of the issuing company.

In the context of financial management, debentures play a significant role in the capital structure of a company. Here are some key points to understand about debenturesin financial management:

- **Definition:** Debentures are long-term debt instruments that acknowledge the company's obligation to repay the principal amount along with periodic interest paymentsto the debenture holders.

2.Fixed Income Investment: Debentures are considered fixed income investments because they provide a predetermined rate of interest to the debenture holders. The interest rate, known as the coupon rate, is typically fixed for the entire tenure of thedebenture.

3. Rank in the Capital Structure: Debentures are usually unsecured debt, meaning they are not backed by any specific assets of the company. In the event of bankruptcy or liquidation, debenture holders have a claim on the company's assets after secured creditors but before shareholders.

- 4. **Types of Debentures:** There are various types of debentures, including convertible debentures, non-convertible debentures, secured debentures, and subordinated debentures. Convertible debentures can be converted into equity shares at a predetermined conversion ratio, while non-convertible debentures cannot be converted into equity shares.

5. **Interest Payment:** Depending on the terms of the debenture, interest payments can be made annually, semi-annually, or at other specified intervals. These interest payments are a liability for the company and an income source for the debenture holders.

6. **Risks and Returns:** Investing in debentures carries risks, such as the company's ability to make interest payments.

Preferred Stock

Preferred stock, also known as preference shares or preferred shares, is a type of ownership stake in a company that combines features of both equity and debt instruments. Preferred stockholders have a higher claim on the company's assets and earnings compared to common stockholders but rank below debt holders in the event of liquidation or bankruptcy. In financial management, preferred stock plays a distinct role. Here are some key points to understand.

- **Priority in Dividends:** Preferred stockholders have a preference when it comes to dividends. They receive a fixed dividend payment, typically expressed as a

percentage of the par value, before any dividends are paid to common stockholders. If the companyhas insufficient profits, preferred shareholders may be entitled to the unpaid dividends insubsequent periods

- **Limited Voting Rights:** In general, preferred stockholders have limited or no voting rights in the company. However, some preferred shares may carry voting rights on specific matters that directly impact preferred stockholders, such as changes to dividendpolicies or the issuance of additional preferred shares.

- **Fixed Income Stream:** Preferred stock is often considered a hybrid instrument because it combines equity and debt characteristics. Preferred shareholders receive a fixed dividend payment, similar to interest on debt instruments, which provides them witha relatively stable income stream. The dividend rate is typically stated at the time of issuance and remains fixed over the life of the preferred stock.

- **No Maturity Date:** Unlike debt instruments, preferred stock generally does not have a maturity date. It is perpetual in nature, meaning it has no fixed end date. However, someissuers may have the option to redeem or call back the preferred shares after a specifiedperiod.

- **Call ability and Convertibility**: Preferred stock may have call provisions that allow the issuer to repurchase the shares from the shareholders at a predetermined price. Additionally, some preferred shares may be convertible into common shares based on predetermined conversion ratios, providing the opportunity for preferred shareholders to participate in potential capital appreciation.

- **Capital Structure:** Preferred stock is typically considered part of a company's capital structure, along with common equity and debt. It represents an intermediate form of capital between debt and common stock, offering certain advantages to both the companyand investors.
- **Risk and Returns:** Preferred stock carries its own set of risks. The fixed dividend payments are subject to the company's ability to generate profits, and

the value of preferred shares can be influenced by interest rate changes and market conditions. Preferred stock usually offers a higher yield compared to common shares but may have limited potential for capital appreciation.

It's important to carefully evaluate the terms and conditions of preferred stock before investing. Consider factors such as the dividend rate, call provisions, conversion features, creditworthiness of the issuer, and the overall financial health of the company. Consulting with a financial advisor or investment professional can provide further guidance on incorporating preferred stock into your financial management strategy.

2.4 Debt

Debt is a fundamental concept in financial management that refers to borrowed funds that a company or individual owes to creditors. In the context of financial management, debt plays a crucial role in the capital structure and financing decisions of businesses. Here are some key points to understand about debt in financial management:

- **Definition:** Debt represents an obligation to repay borrowed funds, typically with interest, over a specified period. It can take various forms, including bank loans, bonds, debentures, lines of credit, or other forms of borrowing.

- **Capital Structure:** Debt is a component of a company's capital structure, alongside equity. The capital structure refers to the mix of debt and equity financing used by a company to fund its operations and investments. Finding the right balance between debt and equity is an important financial management decision.

- **Interest Payments:** When a company borrows money, it incurs interest expenses onthe borrowed funds. Interest payments represent the cost of borrowing and are typically paid periodically, such as monthly or quarterly, based on the terms of the debt agreement.

- **Principal Repayment**: In addition to interest payments, debt requires the

repayment of the principal amount borrowed. Repayment of the principal can occur in regular installments over the loan term or as a lump sum at maturity, depending on the type of debt.

- **Debt Service Ratio:** Financial management involves assessing a company's ability to service its debt. The debt service ratio, also known as the debt coverage ratio, measures the company's ability to meet its interest and principal payment obligations. It is calculated by dividing the company's operating income or cash flow by its debt service obligations.

- **Creditworthiness and Credit Ratings:** The creditworthiness of a borrower is a critical factor in obtaining favorable borrowing terms. Lenders and investors evaluate the creditworthiness of a company based on its financial strength, cash flow, profitability, and other relevant factors. Credit rating agencies assign credit ratings to companies and their debt instruments, providing an assessment of credit risk.

- **Leverage and Financial Risk:** Debt amplifies the financial risk of a company. While debt can provide tax advantages and leverage returns, excessive debt levels can increase financial vulnerability, especially during economic downturns or adverse business conditions. Financial management involves balancing the benefits and risks associated with debt financing.

- **Debt Restructuring and Refinancing:** Financial management may involve strategies to optimize debt, such as debt restructuring or refinancing. Debt restructuring involves modifying the terms of existing debt to improve cash flow or extend repayment periods. Refinancing involves replacing existing debt with new debt at more favorable terms, such as lower interest rates.

2.5 Hire purchase

Hire purchase is a financial arrangement that allows individuals or businesses to acquire an asset through installment payments over an agreed-upon period. It is a type of financing commonly used for purchasing assets such as

vehicles, equipment, or machinery. In financial management, hire purchase is a method of acquiring assets whilespreading the cost over time. Here are some key points to understand about hire purchase in financial management:

- **Periodic Installments:** Instead of paying the full purchase price upfront, the buyer makes periodic payments, typically monthly, over the hire purchase term. These installments consist of both principal and interest portions, allowing the buyer to spread the cost of the asset over time.
- **Ownership Transfer:** While the buyer does not initially own the asset, they have theright to use it during the hire purchase period. Ownership is transferred to the buyer upon the completion of all payments, including any final balloon payment if applicable.
- **Asset Depreciation and Maintenance:** During the hire purchase period, the buyer isusually responsible for the maintenance and any associated costs of the asset. Additionally, the asset may depreciate over time, impacting its value at the end of thehire purchase agreement.
- **Interest Charges:** Hire purchase agreements often include an interest component, which represents the cost of financing over the installment period. The interest rate may be fixed or variable, depending on the terms of the agreement and prevailing market conditions.
- **Flexibility and Cash Flow:** Hire purchase can provide flexibility in managing cash flow since the buyer can acquire the asset without a large upfront payment. However,it's important to consider the total cost of the hire purchase arrangement, including interest charges, compared to alternative financing options.
- **Default and Repossession:** If the buyer fails to make the required payments, the seller may have the right to repossess the asset. The terms and conditions regarding default and repossession are typically outlined in the hire purchase agreement.
- **Accounting Treatment:** From an accounting perspective, the asset acquired through hire purchase is recorded as an asset and the outstanding liability as a liability on thebuyer's financial statements. Each installment payment reduces the liability and increases the ownership of the asset.

It's crucial for individuals or businesses considering hire purchase to carefully assess the terms and conditions, including interest rates, installment amounts,

tenure, and any additional fees or charges. Comparing the total cost of hire purchase with other financing options and considering the specific needs and circumstances of the buyer is essential in making informed financial management decisions. Consulting with a financial advisor or accountant can provide further guidance on the suitability and implications of hirepurchase for specific situations.

2.6 Leasing

It is a financial arrangement in which one party, the lessor, allows another party, the lessee, to use an asset in exchange for periodic lease payments over an agreed-upon period. Leasing is a common method of acquiring assets without incurring the full upfront cost of purchasing them. In financial management, leasing plays a significant role in managing the use of assets and cash flow. Here are some key points to understand about leasing in financial management.

1.**Types of Leases:** There are different types of leases, including operating leases and finance leases (capital leases). Operating leases are typically short-term and allow the lessee to use the asset without transferring significant risks and rewards of ownership. Finance leases, on the other hand, are long-term leases that transfer substantial risks and rewards of ownership to the lessee, effectively resembling a purchase.

- **Lease Payments:** The lessee makes periodic lease payments to the lessor for the use of the asset. These payments can be structured as fixed or variable amounts andare typically made monthly or quarterly.
- **Asset Ownership:** In operating leases, the lessor retains ownership of the asset, while in finance leases, the lessee gains ownership rights by the end of the lease term. The specific terms of the lease agreement determine the transfer of ownership.
- **Cash Flow and Capital Expenditure:** Leasing allows businesses to conserve cash by avoiding large upfront capital expenditures. Instead, they make regular lease payments, which can be more manageable for their cash flow.
- **Flexibility and Upgrades:** Leasing provides flexibility for businesses to upgrade their assets at the end of the lease term. They can return the leased asset and lease a newer or more advanced model, allowing them to stay up-to-date with technological advancements.

- **Tax Implications:** Lease payments may be treated as operating expenses, allowing businesses to deduct them from taxable income. However, tax regulations regarding leasing can vary based on the jurisdiction and the type of lease. It's important for businesses to consult with tax advisors to understand the specific tax implications.
- **Risk and Responsibility:** The lessor typically bears the risk of ownership, such as maintenance costs and asset depreciation, in operating leases. In finance leases, the lessee assumes these risks and responsibilities, similar to owning the asset.
- **Off-Balance Sheet Financing:** Operating leases, depending on the applicable accounting standards such as IFRS 16 or ASC 842, may require the lessee to recognize the lease liability and corresponding right-of-use asset on their balance sheet. This brings transparency to the lessee's financial position and impacts financialratios.

2.7 Venture capital

Venture capital is a form of private equity financing provided to early-stage, high- growth companies with significant growth potential. Venture capital firms invest in these companies in exchange for an ownership stake and play an active role in providing strategic guidance and support. In financial management, venture capital plays a crucial role in funding entrepreneurial ventures and fueling innovation. Here are some key points to understand about venture capital in financial management:

- **Early-Stage and High-Growth Companies:** Venture capital is primarily directed towards companies with high growth potential, typically in sectors such as technology, biotech, and innovation-driven industries. These companies often have limited operating history but possess promising business models or disruptive technologies.
- **Equity Investment**: Venture capital firms invest in companies by purchasing equity shares. The amount of equity acquired depends on the valuation of the company andthe investment amount provided by the venture capital firm.

- **Risk and Return:** Venture capital investments are considered high-risk, high-reward investments. Many start-ups fail, but successful investments can yield substantial returns. Venture capital firms seek to identify companies with the potential for significant growth and aim to generate substantial returns on their investments.
- **Active Involvement:** Venture capital firms often play an active role in the companiesthey invest in. They provide strategic guidance, industry expertise, and mentorship to help the start-ups grow and succeed. Venture capitalists may also join the company's board of directors and actively participate in key decision-making processes.
- **Funding Stages:** Venture capital investments are typically made in different stages of a company's development. These stages include seed funding (early-stage funding to validate the business idea), Series A, Series B, and subsequent funding rounds asthe company grows and reaches milestones.
- **Exit Strategies:** Venture capitalists aim to realize their investments through various exit strategies. Common exit routes include initial public offerings (IPOs), where the company goes public and its shares are traded on a stock exchange, or acquisitions by larger companies. These exits provide liquidity to the venture capital firms and theirinvestors.
- **Due Diligence**: Venture capitalists conduct comprehensive due diligence before making investment decisions. This involves evaluating the company's management team, business model, market opportunity, competitive landscape, intellectual property, financial projections, and other relevant factors to assess the potential for success.

7.**Portfolio Management:** Venture capital firms typically manage a portfolio of investments, diversifying their risk across multiple companies. Portfolio managementinvolves monitoring and supporting the investee companies, actively managing the risk-return profile, and making strategic decisions regarding follow-on investments ordivestments

Venture capital plays a critical role in supporting innovation, entrepreneurship, andeconomic growth. For start-ups and early-stage companies, venture capital can provide the necessary financial resources, industry expertise, and networks to accelerate growth and scale their businesses. However, it's

important for entrepreneurs and management teams to carefully evaluate the terms, conditions, and alignment of interests with venturecapital investors to ensure a mutually beneficial partnership.

Investment Strategies: Private equity firms employ various investment strategies, including leveraged buyouts (LBOs), where they acquire a controlling interest in a company using a significant amount of debt financing. Other strategies include growth equity investments, distressed asset investments, and venture capital investments in early-stage companies.

Long-Term Investment Horizon: Private equity investments are typically held for an extended period, often several years. This longer investment horizon allows private equity firms to implement strategic initiatives, operational improvements, and value-creation strategies to enhance the company's performance.

Active Management: Unlike passive investors in public markets, private equity firms actively manage their investments. They work closely with the company's management team to drive growth, improve operations, and implement changes to enhance profitability and shareholder value.

Capital Restructuring: Private equity firms often restructure the capital of the companies they invest in. This may involve optimizing the company's capital structure, refinancing existing debt, or providing additional capital to support growth initiatives or acquisitions.

Operational Improvement: Private equity firms bring operational expertise and industry knowledge to their portfolio companies. They work closely with management teams to identify and implement operational improvements, cost-saving measures, and efficiency enhancements to drive profitability.

Exit Strategies: Private equity firms aim to realize their investments and generate returns for their investors through various exit strategies. These include selling the company to a strategic buyer, conducting an initial public offering (IPO) to take the company public, or selling to another private equity firm.

Due Diligence: Private equity firms conduct rigorous due diligence before making investment decisions. This involves a comprehensive assessment of the target company's financials, operations, industry dynamics, competitive position, management team, and growth prospects.

Risk and Return: Private equity investments are typically considered higher risk dueto their illiquid nature and the potential for business-specific risks. However, they also offer the potential for higher returns compared to public market investments, given the active involvement and value creation strategies employed by private equity firms

Fund Structure: Private equity funds are typically structured as limited partnerships, with the private equity firm acting as the general partner and limited partners providing the capital. The limited partners, such as pension funds, endowments, and wealthy individuals, invest in the funds and receive returns based on the performance of the portfolio companies.

Private equity can provide capital, expertise, and strategic guidance to companies, helping them grow, restructure, or transition to the next stage of their development. However, it's important to note that private equity investments are typically suited for sophisticated investors with a longer investment horizon and a willingness to accept higher risks.

LETS SUM UP

In this module, the different sources of funds, which can be used by the firms for various requirements of the businesses, are discussed. These sources are usually classified in different categories based on time, ownership, and source of their generation. The advantages and disadvantages of various sources of funds have also been discussed. Capital market plays a very important role in the mobilization of funds for Investment. The capital market has experienced metamorphic changes over the last few years. The competition in the market has become so intense necessitating the introduction of several kinds of securities. The corporates in India mostly raise their funds through capital market by issuing equity shares, preference shares, debentures, bonds and secured premium notes.

MULTI CHOICE QUESTIONS

1. Long term finance is required for _____.

A. Current assets. **B. Fixed assets.**

C. Intangible assets. D. None of these.

2. The _____ decision involves determining the appropriate make-up of the right-hand side of the balance sheet.

A. Asset management. **B. Financing.**

C. Investment. D. Capital budgeting

3. The field of finance is closely related to the fields of _____.

A. Statistics and economics. B. Statistics and risk analysis.

C. Economics and accounting. D. Accounting and comparative return analysis.

4. Finance function involves:

A. Procurement of finance only B. Expenditure of funds only

C. Safe custody of funds **D. Procurement and effective utilization of funds**

5. Which of the following is not a cash outflow for the firm?

A. Depreciation B. Dividends

C. Interest payments D. Taxes

Module -3

International Financial Management

3.2 International financial management

International financial management refers to the management of financial operations and decision-making in a global business environment. It involves various financial activities that companies undertake when operating across borders. International financial management encompasses a wide range of topics and considerations, including foreign exchange risk management, international capital budgeting, global financing strategies, and international financial reporting. Here are some key aspects of international financial management:

- **Foreign Exchange Risk Management:** Companies engaged in international businessface foreign exchange risk due to fluctuations in currency exchange rates. International financial management involves managing this risk through various strategies, such as hedging using financial derivatives, forward contracts, options, or natural hedging techniques.

- **International Capital Budgeting**: International capital budgeting involves evaluating and making investment decisions in projects located in different countries. It requires assessing the cash flows, risks, and returns associated with cross-border investments, considering factors like exchange rate fluctuations, political risks, and regulatory differences.
- **Global Financing Strategies:** International financial management involves determining the optimal financing structure for global operations. It includes decisions on capital structure, debt vs. equity financing, cross-border financing options, and managingthe cost of capital in multiple jurisdictions.

- **International Cash Management**: Managing cash flows across different currencies and jurisdictions is a crucial aspect of international financial management. This involves optimizing global cash positions, implementing cash concentration techniques, managing liquidity, and minimizing transaction costs associated with international payments and receipts.

- **International Trade and Working Capital Management:** International financial management encompasses managing working capital requirements associated with global trade. This includes managing foreign accounts receivable and payable, optimizing inventory levels, and utilizing trade finance instruments such as letters of credit, export financing, and factoring.

- **International Tax Planning**: International financial management involves understanding and optimizing the tax implications of cross-border transactions. This includes managing transfer pricing, assessing tax treaties, minimizing tax exposures, andcomplying with local tax regulations in different jurisdictions.

- **International Financial Reporting**: Companies with global operations must adhere to international financial reporting standards (IFRS) or local accounting standards. International financial management involves ensuring accurate and transparent financialreporting across different jurisdictions, consolidating financial statements, and managingcurrency translation effects.

- **Country Risk Assessment:** International financial management involves assessing and managing country-specific risks such as political instability, regulatory changes, economic conditions, and legal environments. Companies need to evaluate the risks associated with operating in different countries and develop strategies to mitigate these risks.
- **Global Treasury Operations:** International financial management encompasses managing treasury functions on a global scale. This includes centralized cash management, foreign exchange risk management, global funding and liquidity management, and coordinating activities across different subsidiaries and locations.
- **Cultural and Regulatory Considerations:** International financial management requires an understanding of cultural differences, business practices, and regulatory frameworks in different countries. Companies need to adapt their financial management strategies and practices to comply with local regulations and cultural norms.

Effective international financial management is essential for companies operating in a globalized business environment. It involves understanding and managing the unique challenges and opportunities that arise when conducting financial operations across borders. This includes effectively managing foreign exchange risk, optimizing global financing and investment decisions, and navigating diverse regulatory and culturalenvironments.

3.2 Financial planning

It is a crucial aspect of financial management that involves developing a comprehensive roadmap to achieve financial goals and objectives. It encompasses the process of assessing an individual's or organization's current financial situation, setting financial goals, and creating a plan to allocate resources effectively and efficiently. Here are key points to understand about financial planning in financial management:

- **Goal Setting:** Financial planning begins with setting clear and specific financial goals. These goals can include saving for retirement, funding education, buying a home, startinga business, or achieving certain investment targets. Goals should be SMART (specific, measurable, attainable, relevant, and time-bound).

- **Assessment of Current Financial Situation:** Financial planning involves evaluating the current financial position, including income, expenses, assets, liabilities, and cash flow. This assessment helps identify strengths, weaknesses, and areas for improvement.

- **Budgeting:** Developing a budget is an essential part of financial planning. A budget helps allocate income and expenses, track spending, and ensure that financial resources are used efficiently. It allows individuals and organizations to prioritize spending, control expenses, and save for future goals.

- **Risk Assessment and Management**: Financial planning includes identifying and managing various risks that can impact financial well-being. This may involve assessing risks related to income volatility, health, disability, and unexpected events. Strategies such as insurance, emergency funds, and risk mitigation techniques are employed to manage these risks.

- **Investment Planning:** Financial planning involves developing an investment strategyaligned with the individual's or organization's goals and risk tolerance. This may include asset allocation, diversification, and selecting appropriate investment vehicles such as stocks, bonds, mutual funds, real estate, or alternative investments.

- **Retirement Planning:** Financial planning addresses long-term financial security, including retirement planning. It involves estimating retirement needs, determining the required savings rate, selecting retirement accounts, and optimizing contributions to ensure a comfortable retirement.

- **Tax Planning:** Financial planning considers tax implications and strategies to minimize tax liabilities. This includes optimizing deductions, utilizing tax-efficient investment vehicles, and understanding the impact of tax laws on financial decisions.

➢ **Estate Planning:** Financial planning includes developing an estate plan to ensure theorderly transfer of assets and wealth to intended beneficiaries. This may involve creating wills, trusts, establishing powers of attorney, and considering charitable giving.

➢ **Regular Monitoring and Review:** Financial planning is an ongoing process that requires regular monitoring and review. This helps track progress toward financial goals,adapt to changing circumstances, and make necessary adjustments to the plan.

➢ **Professional Advice**: Engaging a qualified financial advisor or planner can provide valuable expertise and guidance throughout the financial planning process. Financial professionals can offer personalized recommendations, help evaluate investment options, and provide insights into complex financial matters.

Effective financial planning helps individuals and organizations optimize their financial resources, make informed decisions, and work towards achieving their financial goals. It provides a roadmap for managing income, expenses, investments, risks, and future financial needs. By taking a proactive approach to financial planning, individuals and organizations can improve financial well-being and build a solid foundation for long-term financial success.

1.1 Behavioral Finance

It is a field of study that combines elements of psychology and economics to understand how individuals make financial decisions. It recognizes that people are not always perfectly rational and that their behavior is influenced by various cognitive biases, emotions, and social factors. In the context of financial management, behavioral finance offers insights into how individuals and organizations make investment decisions, manage risks, and allocate resources. Here are some key principles and concepts ofbehavioral finance in financial management:

➢ **Cognitive biases**: Behavioral finance recognizes that individuals are prone to cognitive biases, which can affect their decision-making process. Examples of cognitive biases include overconfidence, confirmation bias (favoring information that confirms existing beliefs), and loss aversion (feeling the pain of losses more than the pleasure of gains). Financial managers need to be aware of these biases and take them into account when making investment decisions or advising clients.

- **Prospect theory:** Prospect theory is a concept in behavioral finance that suggests people evaluate potential gains and losses relative to a reference point and are more sensitive to losses than gains. Financial managers should consider the impact of prospect theory on risk perception and decision-making when designing investment strategies or communicating with clients.

- **Herd behavior:** Herd behavior refers to the tendency of individuals to follow the actions and decisions of a larger group, even if it may not be rational. Financial managers shouldbe aware of the influence of herd behavior in financial markets and its potential impact oninvestment decisions and market dynamics.

- **Framing:** Framing refers to how information is presented or framed, which can influence decision-making. Financial managers should consider how they present information to clients or stakeholders, as the framing of information can affect their perception and subsequent decisions.

- **Emotional influences:** Emotions play a significant role in financial decision-making. Fear, greed, and overconfidence can lead to irrational investment behavior. Financial managers should help clients manage their emotions and avoid making impulsive or emotionally-driven financial decisions.

- **Anchoring and adjustment:** Anchoring and adjustment bias occurs when individuals rely heavily on an initial piece of information (anchor) and make subsequent adjustments from that point. Financial managers should be aware of this bias and encourage clients to consider a broader range of information when making investment decisions.

- **Behavioral biases in portfolio construction:** Behavioral finance also examines the impact of biases on portfolio construction. For example, individuals may have a tendencyto hold on to losing investments (the disposition effect) or to invest in familiar companies(home bias). Financial managers should be aware of these biases and help clients construct diversified portfolios that align with their long-term goals.

Overall, understanding behavioral finance can enhance financial management byproviding insights into the non-rational aspects of decision-making and helping financial managers account for these biases when advising clients or making investment decisions. By incorporating behavioral principles, financial managers can strive to improve outcomes and align investment strategies with clients' goals and risk preferences.

LETS SUM UP

The Eurobond market has become popular and has flourished in the last few years due to several unique features that sets it apart from the domestic and foreign bond market. More and more Indian corporates are finding the route of raising money through ECBs very attractive. The existence of lower cost of funds in these markets in spite of the currency differential and the costs associated with hedging the exposure as compared to the high costs prevailing in the domestic market have made these markets the darling of eligible Indian companies. Companies which meet the RBI guidelines raise funds in these markets more as a matter of rule rather than exception.

MULTI CHOICE QUESTIONS

1. Which of the following is a legitimate reason for international investment?

   A. Dividends from a foreign subsidiary are tax exempt in the United States.
   B. Most governments do not tax foreign corporations.
   C. **There are possible benefits from international diversification.**
   D. International investments have less political risk than domestic investments.

2. International finance is concerned with_____

   A. exchange rates of currencies B. monetary systems of the world
   C. foreign direct investment **D. all of the above**

3. International finance mainly discusses the issues related with monetary interactions of at least_____.

   A. one country **B. two or more countries**

C. five countries D. None of the above

4. Who determines foreign exchange rates in India?

A. RBI B. FEDAI

C. market forces of demand and supply D. finance ministry of India

5. The current system of international finance is a

A. gold standard B. fixed exchange rate system

C. floating exchange rate system **D. managed float exchange rate system**

Module : 4

Capital Market- Money Market- Financial Information System

4.1 Capital Market

It plays a crucial role in facilitating the flow of funds between investors and borrowers. It is a marketplace where various financial instruments, such as stocks, bonds, and derivatives, are traded. The capital market is divided into two primary segments: theprimary market and the secondary market

Primary Market: The primary market is where new securities are issued and sold for the first time. It is the market for raising fresh capital by companies and governments. In the primary market, organizations issue initial public offerings (IPOs) to sell shares of stock to the public, allowing them to raise funds for expansion, research and development, or other corporate purposes. In addition to IPOs, primary market transactions also include rights issues, private placements, and debt issuances. Financial management in the primary market involves determining the appropriate pricing and timing for issuing new securities.

1. Secondary Market: The secondary market is where previously issued securities are traded among investors. It provides liquidity and a platform for investors to buy and sell securities after their initial issuance in the primary market. The secondary market includes stock exchanges (such as the New York Stock Exchange and NASDAQ) and over-the- counter (OTC) markets, where securities

are traded directly between buyers and sellers. Financial management in the secondary market involves monitoring and analyzing market trends, managing portfolios, and executing trades to maximize returns and manage risks. Key participants in the ***capital market*** include:

a. Investors: Individuals, institutions, and organizations that invest their capital in varioussecurities with the aim of earning a return on investment.

b. Issuers: Companies, governments, and other entities that issue securities to raise capital. They may issue equity (stocks) or debt (bonds) instruments to attract investors.

c. Intermediaries: Financial intermediaries, such as investment banks, brokerage firms, and underwriters, facilitate the issuance and trading of securities in the capital market. They play a crucial role in helping companies navigate the process of issuing securities and connecting buyers and sellers in the secondary market.

d. Regulators: Regulatory bodies, such as the Securities and Exchange Commission (SEC) in the United States, oversee and regulate the capital market to ensure fair practices, investor protection, and market integrity.

Financial management in the capital market involves several activities, including:

1. Capital raising: Financial managers assess the organization's capital needs and determine the appropriate mix of equity and debt financing. They evaluate the cost and risk associated with different sources of capital and decide on the optimal capitalstructure.

2. Investment analysis: Financial managers analyze investment opportunities availablein the capital market to identify securities that align with the organization's investment objectives and risk tolerance. They conduct due diligence, evaluate financial statements,assess market trends, and analyze risk-return profiles to make informed investment decisions.

3. Portfolio management: Financial managers oversee the organization's investment portfolio, which may consist of various securities traded in the capital market. They monitor portfolio performance, rebalance asset allocations, and make strategic investment decisions to optimize returns and manage risks.

4. Risk management: Financial managers employ risk management techniques, such as diversification, hedging, and derivative instruments, to mitigate risks associated with investments in the capital market. They aim to protect the organization's capital and minimize potential losses.

Compliance and regulatory adherence: Financial managers ensure compliance with relevant laws, regulations, and reporting requirements established by regulatory bodies governing the capital market. They stay updated on regulatory changes and implement appropriate measures to meet compliance standards

Effective financial management in the capital market requires a deep understanding of market dynamics, risk management techniques, investment analysis, and regulatory frameworks. Financial managers strive to maximize returns while considering the organization's financial goals, risk appetite, and the interests of various stakeholders.

4.2 Money Market

In financial management, the **money market** plays a vital role in short-term borrowing, lending, and liquidity management. The money market is a subset of the financial market where short-term debt instruments with high liquidity and low risk are traded. It serves as a platform for institutions and individuals to invest surplus funds for short durations and obtain short-term financing. Here are some key aspects of the money market in financial management:

1. Participants: The money market consists of various participants, including banks, corporations, financial institutions, government entities, mutual funds, and individual investors. These participants engage in borrowing, lending, and investing activities within the money market.

2. Instruments: The money market offers a range of short-term debt instruments that are highly liquid and low risk. Some common money market instruments include Treasury bills (T-bills), certificates of deposit (CDs), commercial paper, repurchase agreements (repos), and short-term government securities. These instruments typically have maturities of less than one year, and their yields are determined by prevailing interest rates and market conditions.

3.Liquidity management: The money market provides a platform for institutions to manage their short-term liquidity needs. By investing surplus funds in money market instruments, organizations can earn a return on their idle cash while maintaining quick access to funds when needed. Financial managers use money market instruments as tools for effective cash flow management, ensuring that funds are available for daily operations, payments, and unforeseen expenses.

3. Short-term financing: The money market enables entities to obtain short-term financing to meet their working capital requirements. For example, corporations may issue commercial paper—a short-term unsecured promissory note—to raise funds for operational needs. Financial managers assess the cost and terms of money market financing options to determine the most suitable source of short-term funding for their organizations.

4. Risk and return: While money market instruments are generally considered low risk, financial managers still evaluate the creditworthiness and liquidity of the issuers. They assess the risk-return trade-off associated with different money market instruments and make investment decisions based on their organizations' risk tolerance and investment objectives.

5. Interest rates: Money market interest rates are influenced by various factors, including central bank policies, inflation expectations, economic conditions, and supply and demand dynamics. Financial managers closely monitor interest rate movements in the money market, as they impact the cost of borrowing and the returns earned on money market investments.

6. Regulatory framework: The money market is subject to regulatory oversight to ensure transparency, stability, and fair practices. Regulatory bodies, such as central banks and securities regulators, establish rules and guidelines to govern money market activities and protect investors' interests.

4.3 Microfinance

This refers to the provision of financial services, such as small loans, savings accounts, insurance, and other financial products, to low-income individuals and underserved communities who typically lack access to traditional banking services. Microfinance aims to promote financial inclusion, poverty reduction, and economic empowerment by providing financial resources and services to individuals who are excluded from the formal financial system. In the context of financial management, microfinance plays a significant role in supporting the financial needs of micro- entrepreneurs, small businesses, and low-income households. Here are some key aspects of microfinance in financial management:

1. Small loans: Microfinance institutions (MFIs) provide small loans to individuals who do not have access to traditional bank loans due to their limited financial resources, lackof collateral, or informal employment status. Financial managers in microfinance organizations assess the creditworthiness of borrowers, determine loan terms, and manage the loan portfolio to mitigate risks and ensure repayment.

2. Group lending: Microfinance often utilizes group lending methodologies where borrowers form small groups or associations. These groups provide social collateral and peer support, enabling lenders to extend loans to individuals with limited credit history or collateral. Financial managers in microfinance institutions facilitate group formation, monitor group dynamics, and manage group loan portfolios.

Savings and deposits: Microfinance institutions offer savings accounts and other deposit services to encourage individuals to build savings and develop a savings habit. Financial managers in microfinance organizations design savings products,

oversee deposit operations, and promote financial literacy to help clients effectively manage theirfinances and achieve their financial goals.

3. **Financial education and capacity building**: Microfinance institutions emphasize financial education and capacity building programs to enhance clients' financial literacy, money management skills, and entrepreneurial capabilities. Financial managers developand deliver training programs, workshops, and coaching sessions to empower clients with financial knowledge and skills necessary for effective financial management.

4. **Social impact measurement:** Microfinance institutions often incorporate social impactmeasurement into their financial management practices. Financial managers collect data and assess the social and economic outcomes of microfinance interventions, such as poverty reduction, income generation, job creation, and empowerment of women and marginalized groups. This information helps evaluate program effectiveness and guide strategic decision-making.

5. **Risk management:** Financial managers in microfinance institutions employ risk management strategies to mitigate credit and operational risks. They assess borrowers' creditworthiness, establish appropriate loan terms and interest rates, implement robust loan portfolio management practices, and ensure compliance with regulatory requirements.

6. **Technology and innovation:** Microfinance institutions increasingly leverage technology and digital platforms to enhance operational efficiency, expand outreach, anddeliver financial services to remote or underserved areas. Financial managers explore innovative solutions, such as mobile banking, digital payments, and online lending platforms, to improve service delivery and reach a larger client base.

LETS SUM UP

The Eurobond market has become popular and has flourished in the last few years due to several unique features that sets it apart from the domestic and foreign bond

market. More and more Indian corporates are finding the route of raising money through ECBs very attractive. The existence of lower cost of funds in these markets in spite of the currency differential and the costs associated with hedging the exposure as compared to the high costs prevailing in the domestic market have made these markets the darling of eligible Indian companies. Companies which meet the RBI guidelines raise funds in these markets more as a matter of rule rather than exception.

MULTI CHOICE QUESTIONS

1. ---------- is the market where the existing securities of companies are traded.

(a) Primary market **(b) Secondary market**

(c) Money market (d) None of these

2. Speculators who neither buy nor sell securities in the market but still trade on them are called----------.

(a) Wolves **(b) Stags** (c) Bears (d) None of these

3. National stock exchange operations are divided into ---------- and capital market segment.

(a) Whole sale debt market (b) Money market

(c) Secondary market (d) None of these

4. ---------- is a market where unlisted securities are dealing.

(a) Grey market (b) Kerb market

(c) Capital markets (d) None of these

5. A stock market index ----------.

(a) Shows trends in the market (b) Provides weights to shares

(c) Show the volume of trade in market (d) Shows transactions of shares

Self-Assessment Questions :

1. Can you define financial management?
2. What are the key components or activities involved in financial Management?
3. How does financial Management contribute to the overall success of an organisation?
4. What is the scope of financial management?
5. What are the different areas or aspects covered by financial management?

6. How does financial management interact with other functions within an organisation?
7. What are the main objectives of financial management?
8. How do these objectives align with the overall goals of an organisation?
9. What is profit maximization in the context of financial management?
10. Discuss the role of finance managers in financial decision –making processes.
11. Compare and contrast short- term and long-term sources of finance. Give examples of each.
12. Differentiate between debentures, preferred stock and debt in term of their characteristics and features.
13. Compare and contrast hire purchase and leasing as methods of financing assets.
14. Define venture capital and private equity. Discuss their role in funding startups andgrowth –oriented companies.
15. Describe the key challenges and consideration in international financialmanagement.
16. Define Behavioural finance and explain how it challenges traditional finance theories.
17. Discuss the role of microfinance in promoting financial inclusion and povertyalleviation.
18. Explain the importance of financial information system in organisations.
19. Critically examine equity capital as a source of raising finance.
20. As a manager of a company, if you need funds to manage the working
21. Capital effectively which source you would prefer and why?
22. Discuss the advantages and disadvantages of using Debentures as a
23. Source of raising funds.
24. How is lease finance different from that of equity or debt finance?
25. Explain how Asset Securitization is considered as a source of finance?
26. Discuss its advantages and disadvantages to the company.
27. Describe the kinds of Projects preferred by Venture Capitalist. What are
28. The advantages of using venture capital funds, to a business?

ANSWERS TO CHECK YOUR PROGRESS	
Module 1	1. (B) B.Maximization of share holder's wealth 2. (B) All the financial resources 3. (D) Profit maximization is concerned more with maximizing net income than the stock price. 4. (B) wealth maximization 5. (B) Working Capital Management
Module 2	1. (B) Fixed assets 2. (B) Financing 3. (C) Economics and accounting 4. (D) Procurement and effective utilization of funds 5. (A) Depreciation
Module 3	1. (C)There are possible benefits from international diversification. 2. (D) all of the above 3. (B). two or more countries 4. (C) market forces of demand and supply 5. (D) managed float exchange rate system
Module 4	1. (B) Secondary market 2. (B) Stags 3. (A) Whole sale debt market 4. (A) Grey market 5. (A) Shows trends in the market

Glossary :	
Financial Management	It is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations.
Financing Decision	It is related to the financing mix or capital structure or leverage and the determination of the proportion of debt and equity.

Investment Decision:	Investment decision is related with the selection of assets, that a firm will invert
Wealth Maximization	It is maximizing the present value of a course of action.
Venture Capital	Venture capital is a form of equity financing where capital is invested in exchange for equity, typically a minority stake, in a company that looks poised for significant growth.
Leasing	A lease is a contract whereby the owner of an asset (the Lessor) grants to another person (the Lessee) exclusive right to use the asset for anagreed period of time, in return for the payment of a rent (called Lease Rental).

References :

1.Dr.V.R.PALANIVELU - Financial Management,
2. Dr.V.R.PALANIVELU - Accounting for Managers

**********UNIT-1 COMPLETED*******

UNIT 2

CAPITAL BUDGETING :

Investing Decision – Capital Budgeting Process-Techniques of Investment Appraisal: Pay Back Period: Accounting Rate of Return, Time Value of Money- DCF Techniques-Net Present Value –Profitability Index and Internal Rate Return - Problems-Risk analysis in Capital Budgeting –Introduction to Fintech -Digital Currency-Crypto currency -Financial Modeling; Hurdle Rate.

Unit Module Structuring

1. Investing Decision
2. Capital Budgeting
3. DCF Techniques Pay Back Period, Accounting Rate of Return
4. NPV, PI, IRR
5. Fintech -Digital Currency-Crypto currency -Financial Modeling; Hurdle Rate.

Unit Objectives

The objectives of this unit are:

- To explain nature and utility of Capital Budgeting,
- To provide an understanding of the process of evaluation of Investment proposals,
- Enable you to estimate the cash flows of the investment projects.
- Identify relevant cash flows for NPV analyses.
- Discuss the various investment evaluation techniques like Pay back, Net Present Value (NPV), Profitability Index (PI), Internal Rate of Return (IRR), Modified Internal Rate of Return (IRR) AND Accounting Rate of Return.
- Finally, this chapter ends, as all the other chapters will do, with questions and respective solutions.

Module: 1

2.1. Investment Decision

2.1.1 Introduction :

The **Investment Decision** relates to the decision made by the investors or the top level management with respect to the amount of funds to be deployed in the investment opportunities.

Simply, selecting the type of assets in which the funds will be invested by the firm is termed as the investment decision. These assets fall into two categories:

1. **Long Term Assets**
2. **Short-Term Assets**

The decision of investing funds in the long term assets is known as Capital Budgeting. Thus, Capital Budgeting is the process of selecting the asset or an investment proposal that will yield returns over a long period.

- The first step involved in Capital Budgeting is to select the asset, whether existing or new on the basis of benefits that will be derived from it in the future.
- The next step is to analyze the proposal's uncertainty and risk involved in it. Since the benefits are to be accrued in the future, the uncertainty is high with respect to its returns.
- Finally, the minimum rate of return is to be set against which the performance of the long-term project can be evaluated.

2.1.2. Factors Influencing Investment Decisions:

The main factors which, influence capital investment are

1.Technological change: In modem times, one often finds fast obsolescence of technology. New technology, which is relatively more efficient, takes the place of old technology; the latter getting downgraded to some less important applications. However, in taking a decision of this type, the management has to consider the cost of new equipment vis-a-vis the productive efficiencies of the new as well as the old equipment's. However, while evaluating the cost of new equipment, the management

should not take into, account its full accounting cost (as the equipment lasts for years) but its incremental cost. Also, the cost of new equipment is often partly offset by the salvage value of the replaced equipment.

2. Competitors 'strategy:

Many a time an investment is taken to maintain the competitive strength of the firm; If the competitors are installing new equipment to expand output or to improve quality of their products, the firm under consideration will have no alternative but to follow suit, else it will perish. It is, therefore, often found that the competitors' strategy regarding capital investment plays a very significant role in forcing capital decisions on a firm.

3. Demand forecast :

The long-run forecast of demand is one of the determinants of investment decision. If it is found that there is a market potential for the product in the long run, the dynamic firm will have to take decisions for capital expansion.

4. Type of management :

Whether capital investment would be encouraged or not depends, to a large extent, on the viewpoint of the management. If the management is modern and progressive in its outlook, the innovations will be encouraged, whereas a conservative management discourages innovation and fresh investments.

5. Fiscal policy :

Various tax policies of the government (like tax concessions on investment income, rebate on new investment, and method of allowing depreciation deduction allowance) also have favourable or unfavourable influence on capital investment.

6. Cash flows :

Every firm makes a cash flow budget. Its analysis influences capital investment decisions. With its help the firm plans the funds for acquiring the capital asset. The budget also shows the timing of availability of cash flows for alternative investment proposals, thereby helping the management in selecting the desired project.

7. Return expected from the investment :

In most of the cases, investment decisions are made in anticipation of increased return in future. While evaluating investment proposals, it is therefore essential for the firm to estimate future returns or benefits accruing from the investment.

2.1.3.Investment Evaluation Criteria

The capital budgeting process begins with assembling of investment proposals of different departments of a firm. The departmental head will have innumerable alternative projects available to meet his requirements. He has to select the best alternative from among the conflicting proposals. This selection is made after estimating return on the projects and comparing the same with the cost of capital. Investment proposal which gives the highest net marginal return will be chosen.

Following are the steps involved in the evaluation of an investment:

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

2.1.4.Features required by Investment

A sound appraisal technique should be used to measure the economic worth of an investment project. Porter field, J.T.S. in his book, Investment Decisions and Capital Costs, has outlined some of the features that must be had by sound investment evaluation criteria.

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

MULTI CHOICE QUESTIONS

1. **Investment can be defined as**

(A) Person's dedication to purchasing a house or flat

(B) Use of capital on assets to receive returns

(C) Usage of money on a production process of products and services

(D) Net additions made to the nation's capital stocks

2. According to the text's authors, _____ is the most important of the three financial management decisions.

(A) Asset management decision. (B) Financing decision.

(C) Investment decision. (D) Accounting decision.

3. The _____ decision involves efficiently managing the assets on the balance sheet on a day-to-day basis, especially current assets.

(A) Asset management. (B) Financing.

(C) Investment. (D).Accounting.

4.What is the primary goal of financial management?

(A) To minimise the risk (B) To maximise the owner's wealth

(C) To maximise the return (D) To raise profit

5. **The capital budget is associated with.**

(A) Long terms and short terms assets (B) Fixed assets

(C) Long terms assets (D) Short term assets

Module : 2

2. CAPITAL BUDGETING

.2.1.Capital Budgeting – Definition :

"Capital budgeting" has been formally defined as follows.

- "Capital budgeting is long-term planning for making and financing proposed capital outlay".
  - Charles T. Horngreen
- "The capital budgeting generally refers to acquiring inputs with long-term returns". **- Richards & Greenlaw**
- "Capital budgeting involves the planning of expenditure for assets, the returns from which will be realized in future time periods". **- Milton H. Spencer**

2.2.2.Capital Budgeting Process:

The important steps involved in the capital budgeting process are

(1) Project generation,
(2) Project evaluation,
(3) Project selection and
(4) Project execution

1.Project Generation: Investment proposals of various types may originate at different levels within a firm. Investment proposals may be either proposals to add new product to the product line or proposals to expand capacity in existing product lines. Secondly, proposals designed to reduce costs in the output of existing products without changing the scale of operations. The investment proposals of any type can originate at any level. In a dynamic and progressive firm there is a continuous flow of profitable investment proposals.

2. Project Evaluation: Project evaluation involves two steps: i) estimation of benefits and costs and ii) selection of an appropriate criterion to judge the desirability of the projects. The evaluation of projects should be done by an impartial group. The criterion selected must be consistent with the firm's objective of maximizing its market value.

3. Project Selection: There is no uniform selection procedure for investment proposals. Since capital budgeting decisions are of crucial importance, the final

approval of the projects should rest on top management.

4. Project Execution: After the final selection of investment proposals, funds are earmarked for capital expenditures. Funds for the purpose of project execution should be spent in accordance with appropriations made in the capital budget.

2.2.3.Need and Importance of Capital Budgeting

Each and every business organization has to meet out various business decisions. Among these, capital budgeting is the most crucial and critical business decisions, because of the following reasons.

(i) Requirements of heavy funds: In any capital expenditure decision taken by the organization it requires huge amount of capital for their execution. These funds raised by the organization from various internal and external sources. So it must take correct decision for identifying most profitable scheme of investment.

(ii) Long period commitment: The amount involved in capital expenditure budget not only for heavy but more or less permanently blocked in the business under this aspect it involve longer the time and greater the risk, so careful planning is essential.

(iii) National importance: In general the fund position in India is limited. But these limited funds are properly invested in those capital projects which are helpful in increasing productivity and contributing economic growth of the country in whole

(iv) Meet out the obsolescence loss: The organisation could take proper steps in order to overcome the losses arising due to obsolescence of fixed assets on account of growth of technological changes. At the time of preparation of capital budgeting it should be considered by the organization.

(v) Supporting to other financial decisions: Specifically capital investment decisions re- lated to some other important financial matter of the firm ie correct investment decision will help the organization with regard to financial decisions and dividend decision.

(vi) Irreversible decisions: In most of the cases capital budgeting decisions are irreversible. Once a firm takes decision for acquiring fixed assets it should be treated as permanent nature. It is really very difficult to reverse the decision because it is difficult to find out the market for the capital assets. Even to find the market it should be sold at very low value at a substantial loss in the event of decision being proved wrong.

2.2.4.Objectives of Capital Budgeting:

- It guides the management for taking correct investment decision
- It influences the firm's growth in the forth coming periods.
- It is the tool for controlling capital expenditure."
- To assist the management enables to formulate sound policy for depreciation and replacement of fixed assets.
- It guides the management about the purchase of fixed assets as and when necessary.
- It Minimize the risk of over investment or under investment of money in the fixed assets.

2.2.5.Limitations of Capital Budgeting

- The application of capital budgeting evaluation techniques normally a difficult task.
- The applications of various techniques give controversial results.
- None of the different methods for evaluating profitability of the fixed assets or projects is free from some drawbacks.

2.2.6.Capital Budgeting – Significance

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

can reach prudent investment decision.

- Capital budgeting is significant because it deals with right mind of evaluation of projects. A good project must not be rejected and a bad project must not be selected. Capital projects need to be thoroughly evaluated as to costs and benefits.
- Capital projects involve investment in physical assets such as land, building plant, machinery etc. for manufacturing a product as against financial investments which involve investment in financial assets like shares, bonds or mutual funds. The benefits from the projects last for few to many years.
- Capital projects involve huge outlay and last for years.
- Capital budgeting thus involves the making of decisions to earmark funds for investment in long term assets yielding considerable benefits in future, based on a careful evaluation of the prospective profitability / utility of such proposed new investment.

MULTI CHOICE QUESTIONS

1.Capital Budgeting is a part of:

(A) Investment Decision (B) Working Capital Management

(C) Marketing Management (D) Capital Structure

2.Capital Budgeting deals with:

(A) Long-term Decisions (B) Short-term Decisions

(C) Both (a) and (b) (D) Neither (a) nor (b)

3.Capital Budgeting Decisions are:

(A) Reversible (B) Irreversible

(C) Unimportant (D) All of the above

4.Which of the following is not incorporated in Capital Budgeting?

(A) Tax-Effect (B) Time Value of Money

(C) Required Rate of Return (D) Rate of Cash Discount

5. _____ is a long term planning for financing proposed capital outlay.

(A) Capital Budgeting. (B) Budgeting.

(C) Cash Budget. (D) Sales Budget

LETS SUM UP :

The ultimate objective of the financial management is to maximise the satisfaction of all stakeholders in general and wealth of shareholders in particular. To achieve these objectives the firm has to allocate its resources in an effective manner. Allocation of Current funds with an anticipation of future returns may be known as Capital Budgeting. Capital Budgeting decision is one of the most important decisions of a business concern. It involves the estimation of cash outflows and inflows of a project. It has an impact over the future profitability and survival of the firm. Moreover, they are irreversible and may be difficult.

Module : 3

2.3.TECHNIQUES OF INVESTMENT APPRAISAL:

- **Discounted Cash Flow (DCF) Criteria**
  - Net present value (NPV)
  - Internal rate of return (IRR)
  - Profitability index (PI)
- **Non-discounted Cash Flow Criteria**
  - Pay-back period
  - Discounted payback period
  - Accounting rate of return (ARR)

2.3.1.Payback period Method:

The pay back period method represents number of years required to recover the original investment of the particular fixed assets. It should be calculated by dividing the total cost of the fixed assets by the annual savings in costs or additional earnings after tax but before depreciation This is most commonly used method. Normally the investments with a shorter pay back period is preferred than the project has longer pay back period. The pay back period is calculated as follows.

$$\text{Pay back period} = \frac{\text{Original investment}}{\text{Savings or Net cash inflow}}$$

Note: Some problems cash inflow should be given clearly. Suppose it should

not be given in the problem, we have to find the Net cash inflow in the following manner.

Net savings + Depreciation Net Cash inflow

In actual practice, this method is based on the idea about the original cost of the project must recovered after recovery of the investment the company is to remain effective existence. Normally the best project must be selected which has the shortest pay back period.

Sometimes the working life of the assets should be more than the pay back period, due to this amount of profit is also earned by the firm in addition to the recovery of the cost of the This is called post pay back profitability. The post pay back profitability of the project can calculated by the following formula.

Post pay back profitability - Savings or Earnings per annum [working life - pay back period)

The pay back period is more or less similar to break-even point. A business organization start its profit point even after reaching the break-even point. Similarly investment in a project will earn a profit only if its life exceeds the pay back period.

2.3.2Suitability of pay back method :

- It is suitable when the projects have a high risk category and also possibilities for rapid technological changes.
- It is suitable for evaluating overseas investments decisions. When there is a political uncertainty.
- It is suitable for those projects that has shorter gestation period and also the small amount of project cost.

2.3.3.Merits and demerits of pay back method :

Merits: The pay back method has the following merits.

- It is easy to workout and simple to understand.
- It is assist for some specified industries subject to rapid technological changes or uncertainty.
- It is more helpful for those project where profitability is not important.
- This is very useful to a firm which is suffering from shortage of funds and quick recovery of cash is essential to meet out the project cost.

Demerits: The method has the following drawbacks

- It ignore the profitability of the project
- It ignores the time value of money
- It is more rigidity

2.4. Accounting or Average Rate of Return method

It is otherwise known as return on investment method, because the capital investment proposals are judged on the basis of their relative profitability rather than the cash inflow of the project. According to this method the average yield is calculated based upon the income earned by the project during the entire economic life. The project which yields a highest rate of return is normally selected.

The accounting rate of return may be calculated by the following methods.

(i) Rate of return on original investment method.

$$\frac{\text{Return}}{\text{Original investment}} \times 100$$

(ii) Rate of return on average investment method

$$\frac{\text{Return}}{\text{Average investment}} \times 100$$

(iii) Average Return on average investment method

$$\frac{\text{Average Annual Profit}}{\text{Average investment}} \times 100$$

Workings

Total profit (all the years taken together)

(a) Return normally represent average return ie, average profit. It can be calculated in the following method.

$$\text{Average profit} = \frac{\text{Total profit (all the years taken together}}{\text{No. of years}}$$

[Profit means profit after tax]

(b) Average investment should be calculated in the following methods.

(I) $$A\ I = \frac{\text{Original Investment}}{2}$$

(Or)

(II) $$\frac{\text{original investment + scrap value of the assets}}{2}$$

(Or)

(III) $$\frac{\text{original investment + scrap value of the assets +additional wc +scrap value}}{2}$$

2.4.1.Merits and Demerits of ARR method :

Merits: The following are the merits of this method.

(i) It is easy to understand and simple to workout.

(ii) It gives the due weightage to the profitability of the project.

(iii) It takes into consider the total earnings over the entire economic life of the project

Demerits: This method suffers from the following drawbacks.

(i) It ignores the time value of money.

(ii) It ignores the risk and uncertainty factors.

(ii) There are different techniques applied for calculating the Accounting Rate of Return. Each method gives different results. So it affects the reliability of this method.

MULTI CHOICE QUESTIONS

1. A project costs Rs, 1,00,000 annual cash flow of Rs. 20,000 for 8 years. Its payback period is _____.

(A) 1 year (B) 2 years (C) 3 years (D) 5 years.

2. Cost of the project is 6,00,000 , life of the project is 5 years annual cash flow is 2,00,000cut off rate is 10% the discounted pay back period is _____.

(A) 2 years. (B) 2 years 6 months (C) 3 years. (D) 3 years 9 months.

3. The term _____ refers to the period in which the project will generate the necessary cash flow to recoup the initial investment.

(A). Internal return. (B). Payback period.

(C). Discounting return. (D). Accounting return.

4. A project costs RS.36,000 and is expected to generate cash flows of RS.11,200 annually for 5 years .Given: payback period is 3.214.according to table A-4, discount factors closest to 3.214 for 5 year are 3.274(15% rate of interest) and 3.199(17% rate of interest the IRR will be:

(A) 15.8% (B) 17.8% (C) 16.8% (D) 18.8%

5. A project has the following cash flows: year 0 year-1 year-2 (RS.40,000) (RS.96,000) (RS.57,500) which are the internal rates of return

(A) 15% and 25% (B) 15% and 125%

(C) 25% and 115% (D) 115% and 125%

LETS SUM UP

- Capital budgeting techniques are techniques which provide a decision making criteria for evaluating long term investment proposals.
- Traditional or Non discounting capital budgeting techniques do not take into account the time value of money. It mainly includes two techniques: Accounting Rate of Return and Payback Period method.
- Accounting or Average rate of return (ARR) is used to calculate the return generated from net income of the proposed capital investment. ARR is computed by dividing the average annual profits after tax by the average investment.
- Payback period is simple and easy to compute, tells us the liquidity of the project, gives good indication of riskiness of project and can be easily interpreted.
- However, Payback period ignores cash flows occurring after the payback period, does not consider the timing of cash flows and salvage value of the project

.

Module : 4

2.5.Diounted cash flow Techniques

The Discounted cash flow technique is an improvement of the pay back technique. This method gives the time value of money. Because in any economy capital or funds that should be invested in various projects has certain value under expectation of future return. The organization is very much interested to find out time value of money. In this respect discounting factor applied as against the cash inflow to determine present value of future income. Discounted cash flow method for evaluating capital investment proposals are of four types.

- Net present value method
- Profitability index method.
- Internal rate of Return method.
- Terminal value method.

2.6.Net present value method (NPV)

Under this method present value of cash inflow is calculated i,e by applying the discount actor as against in the cash inflow and compared with the original investment. If the present value higher than the original investment the project should be recommended otherwise it may he rejected

Ascertainment of NPV:

Year	Cash inflow (Rs)	P/V	DCF (Rs)
1	XXX	XX	XXX
2	XXX	XX	XXX
3	XXX	XX	XXX
		Sum of DCF	XXX
		Less original investment	XXX
		Net Present Value	XXX

The present value can be taken from the present value table or it will be calculated by the following formula.

$$PV = \frac{1}{\quad}$$

$$(1+ r)^n$$

For example: Present value of Rs. 100 @ 10% after one year will be

$$\frac{100}{(100 + 10.1)^n} \quad \frac{100}{110} = \quad =.9090$$

i.e, Present value of Rs. 100 is 90.91

Decision Procedure

(i) In case of one project, if the NPV is positive it can be accepted.

(ii) For more than one project the one with highest net present value should be recommended.

2.7.Profitability index method

This is otherwise called as excess present value index or present value index of Benefit cost late It should be calculated only after the computation of Net present value. It should be found at by comparing the total of present value of future cash inflows and the total of present value of are cash outflows.

$$\text{Profitability Index (PI)} = \frac{\text{Present value of future cash inflows}}{\text{Present value of future cash outflows}} \text{ X } 100$$

$$\text{(PI)} = \frac{\text{Present value of future cash inflows}}{\text{Initial cash outlay}} \text{ X } 100$$

$$\text{(PI)} = \frac{\text{Total profit (all the years taken together}}{\text{No. of years}}$$

The proposal is accepted if PI is more than one or more than 100%.

2.8.Terminal Value method

According to this method, it is assumed that each of the future cash flows is immediately reinvested in another project at a certain desired rate of return until the termination of the project simply it is the net cash flows and outflows are compounded

forwarded rather than discounting them backward as followed in NPV method. Based upon the nature of projects and the level of present value the project should be accepted.

$$\text{Present value} = \frac{\text{Compounded value of cash inflows}}{(1 + K)^{n}}$$

Here K = Cost of Capital

n = Life of the Project.

2.9.Internal Rate of Return

Internal rate of return may be defined as the rate of return at which total present value of future cash inflows is equal to initial investment. Simply it is the rate at which sum of discounted cash inflows equalize the sum of discounted cash outflows. The rate of return is generally found by trial and error method. It can be calculated in the following formula,

$$\frac{\text{Cash inflows}}{\text{Cash outflows}} = 1$$

2.9.1.Procedure for Calculation

(i) When cash inflows are uniform

In case of those project which has a uniform cash inflow, IRR should be found out with the help of the factor to be located in the annuity table. The factor is calculated in the following way.

$$F = \frac{1}{C}$$

Where, F = Factor to be located

I = Initial investment

C = Cash inflow per year.

Actually after calculation of the factor, find where it will be located in the Present value Table No II on the line representing number of years corresponding to estimated

useful life of the assets.

(ii) Where cash inflows are not uniform

If uneven cash inflow given in the problem we have to find the internal rate of returns by the trial and error method

2.9.2.Procedure for Computation of trial and error method

(i) Calculation of first trial rate

For the purpose of find out the trial rate better we have to find out the factor with help of the following formula:

$$F = \frac{1}{C}$$

Compute value from the above formula is treated as first trial rate.

(ii) Second trial rate and third trial rate may be determined (Assumed if necessary)

(iii) If we want the exact IRR we have to apply the following formula even after applying the last trail rate.

$$\text{IRR} = \text{lower trail rate} + \frac{\text{NPV at lower rate}}{\text{NPV at lower rate} - \text{NPV at higher rate}} \times \text{difference between higher and lower rate}$$

2.9.3.Advantages of Discounted cash flow method

(i) It is superior to other methods because it considers the earnings of a project over the entire economic life of the project.

(ii) It gives the due weightage to the time value of money flows

(iii) It is more suitable method where cash inflows are uneven.

(iv) It provides guidance for the comparison between projects.

2.9.4.Disadvantages of Discounted cash flow method

(i) It is difficult to understand and workout

(ii) Difficult to determine the economic life of any project accurately

(iii) Difficult to determine the appropriate rate of interest.

(iv) It should be worked out based on certain assumption. Always these assumptions may not be good results because it depends upon the available investment opportunities.

2.10.Factors influencing the Capital Budgeting

There may be number of factors, such as financial as well as non-financial which influences the Capital Budgeting decisions. The important factor that influence the Capital Budgeting decision is the profitability of the proposal. The following factors taken into consideration while taking capital Budgeting Decisions.

(i) Cost of the projects (ii) Intangible factors

(iii) Availability of funds (iv) Urgency

(v) Degree of Certainty (vi) Legal factors

(vii) Product demand (viii) Future earnings

(ix) Cost of production (x) Research and development projects

(xi) Relative importance of the project

2.10.1.Control of capital expenditure

Control of capital expenditure is an integral part of capital expenditure decisions. The companies formulate various programmes to control the capital expenditure decisions. Normally the following programmes and measures are followed by the organization to control the capital expenditure. It may be the following.

1. Preparation of capital expenditure budgets.
2. Preparation of statement - Request for funds
3. Variance analysis - comparison of actuals against estimated values

4 Follow-up action

2.10.2.Factors influencing the estimation of future cash flow

In order to find out the profitability of the proposals numbers of techniques are employed by the organization. In this regard it requires future cash flows and out flows. Future cash flows and outflows are estimated based on the following factors.

- Expected economic life of the project
- Capacity of the project
- Salvage value of the asset at the end of the economic life
- Selling price of the product.
- Production cost
- Depreciation rate.
- Taxation rate.
- Future demand for the product.

MULTI CHOICE QUESTIONS

1.The project can be selected if its profitability index is more than _____.

(A) 1%. (B) 3%. (C) 5%. (D) 10%.

2. .Initial outlay 50,000, life of the asset 5 yrs, estimated annual cash flow 12,500, IRR =_____.

(A) 5% (B) .6% (C) 8% D)10%

3. R.Ltd.is considering a capital investment for which initial outlay is RS.20,000. Net annual cash flow (de for taxes) are predicted to be RS.40,000 for 10 years. the IRR is:

(A) 16.01% (B) 14.51% (C) 15.10% (D) 16.10%

4. If Net Present Value for a project is negative, then

(A) IRR=Cost of Capital (B) IRR>Cost of Capital

(C) Benefit Cost Ratio>1 (D) IRR<Cost of Capital

5. Given that PV of cash inflows RS. 45,352, PV of cash outflows RS. 50,000.the profitability index will be:

(A) 0.807	(B) 0.907	(C) 0.702	(D) 0.607

LETS SUM UP

Discounted Cash Flow or Modern techniques of capital budgeting are based on time value of money and they use discounted cash flows. Main ones are: Net Present Value (NPV), Profitability Index (PI), Internal Rate of Return (IRR), Modified Internal Rate of Return (MIRR) and Discounted Payback period. NPV is excess of present value of all cash inflows over present value of all cash outflows. It is computed by subtracting the present value of the cash outflows from the present value of cash inflows. Profitability index, also known as profit investment ratio, benefit cost ratio and value investment ratio, is the ratio of returns generated to amount investment in a Proposed project. It is computed by dividing the present value of cash inflows by the present value of cash outflows. PI also suffers from limitations of being complex, requiring computations of required rate of return and estimation of cash flows.

PROBLEM NO : 1

The following are the cash inflows and outflows of a certain project of ZENX Lad

Year	Out flows	Cash in flow
0	1,50,000	
1	30,000	30,000
2		30,000
3		50,000
4		60,000
5		40,000

The salvage Value at the end of 5 Years is Rs.40, 000. Taking the 4 Years cut off rate as 10%, Calculate net present Value

Year	1	2	3	4	5
P.V.factor @ 10%	0.909	0.826	0.751	0.683	0.621

Solution :

Year Rs..	Cash Inflows	Present Value Factor @ 10 %	Present Value of cash inflows (Rs)
1	30,000	0.909	27,270
2	30,000	0.826	24,780
3	50,000	0.751	37,550
4	60,000	0.683	40,980,
5	40,000	0.621	24,840
5	40,000 (Salvage Value)	0.621	24,840
			1,80,260

Total present Value of cash inflows		1, 80,260
Less: Total present Value of outflows		
Cash outflow at the beginning	1, 50,000	
Cash outflow at the end of		
First year 30,000×0.909	27,270	1, 77,270
Net present value		2,990

Result: the NPV is positive the project should be accepted.

PROBLEM NO : 2

Narmadha Ltd. considers the purchase of one of the two machines. As the basis for selection, the following data was developed.

	Machine R Rs	Machine P Rs
Original cost	25,565	25,565
Profit after tax :		
Year 1	687	4,687
Year 2	1,687	3,687
Year 3	2,687	2,687
Year 4	3,687	1,687
Year 5	4,687	687
	13,435	13,435

The expected rate of return for the company is 16%. Both the machines have a life of five years and will not have any salvage value. The company is in the 40% tax bracket. You are required to calculate NPV and P.I. Index. Suggest the most profitable machine.

Year	1	2	3	4	5
P.V.factor @	0.862	0.743	0.641	0.551	0.476

Solution :

To ascertain Present Value, Cash flows are to be taken into account.

Cash flows = Profit after Tax + Depreciation

Depreciation = Profit after Tax + life

	Machine R	Machine P
Depreciation	Rs.25,56 ÷55 = Rs 5113	Rs.25,56 ÷ 55 = Rs 5113

Calculation of cash Inflows

Year	Machine R			Machine P		
	Profit after Tax Rs..	Depreciation Rs..	Cash inflows Rs..	Profit after Tax Rs..	Depreciation Rs..	Cash inflows Rs..
1	687	5,113	5,800	4,687	5,113	9,800
2	1,687	5,113	6,800	3,687	5,113	8,800
3	2,687	5,113	7,800	2,687	5,113	7,800
4	3,687	5,113	8,800	1,687	5,113	6,800
5	4,687	5,113	9,800	687	5,113	5,800

Calculation of Net present Values

Year	Machine R			Machine P	
	P.V. Factor @ 16 % Rs..	Cash inflows Rs..	P.V. of Cash inflows Rs..	Cash inflows Rs..	P.V. of Cash inflows Rs..
1	0.862	5,800	5,000	9,800	8,448
2	0.743	6,800	5,052	8,800	6,538
3	0.641	7,800	5,000	7,800	5,000
4	0.552	8,800	4,858	6,800	3,754
5	0.476	9,800	4,665	5,800	2,761
Total present value of Cash inflow			24,575		26,501
Present value of Outflow (Original Cost)			25,565		25,565
Net Present Value			(-) 990		936

The net present Value is negative in the case of machine R. Machine P has a positive NPV Index of Rs.936. Hence Machine P is recommended.

Total present value of cash inflows

Profitability Index : = $\frac{\text{Total present value of cash outflows}}{\text{Total present value of cash outflows}} \times 100$

Machine R	Machine P
$\frac{24,575}{25,567} \times 100 = 96.11\ \%$	$\frac{26,501}{25,565} \times 100 = 103.66\ \%$

Result: Profitability index is high in case of P is recommended.

PROBLEM NO : 3

Himalaya Ltd. has Rs.2,00,000 to invest in a certain project. The following proposals are under consideration. The cost of capital of the company is estimated to be 15%.

Project	Initial Outlay Rs.	Cash Inflows Rs.	Life (Years)
A	10,000	25,000	10
B	70,000	20,000	8
C	30,000	6,000	10
D	50,000	15,000	10

Rank the project on the basis of:

(a) Profitability index method. (b) Net present Value method

Note: PV. of the Annuity of Rs.1. received discounted at 15% is given below:

8 Years - 4.487

10 Years - 5,019

Solution :

(a)Profitability Index= $\frac{\text{Total P.V Cash of Inflows}}{\text{Total P.V Cash of Inflows}} \times 100$

Project A = $\frac{1.25,475}{1,00,000} \times 100 = 125.48\%$

Project B = $\frac{Rs.89,740}{Rs.70,000} \times 100 = 128.2\%$

Rs.37.554

$$\text{Project C} = \frac{\text{Rs.30,000}}{\text{Rs.30,000}} \times 100 = 125.18\%$$

$$\text{Project D} = \frac{\text{Rs.75,285}}{\text{Rs.50,000}} \times 100 = 150.57\%$$

(b) Net present value method

Ranking the Projects according to NPV and Profitability Index

1 Project	2 cash inflows Rs	3 P.V. of Annuity @15	4 P.V. of cashflow Rs.	5 Investment Rs	(4-5) NPV Rs.	Rank	Profitability index %	Rank
A	25,000	5.019	1,25,475	1,00,000	25,475	1	125.48	3
B	20,000	4.487	89,740	70,000	19.740	3	128.2	2
C	6,000	5.019	30,114	30,000	114	4	125.18	4
D	15,000	5.019	75,285	50,000	25.285	2	150.57	1

PROBLEM NO : 4

Excel Ltd; is considering the purchase of a new machine which will carry out the operations performed by labour. Damsel and Shylock are alternative models. Form the following information, you are required to prepare a profitability statement and work out the pay-back period in respect of each machine.

	Machine Damsel	Machine Shylock
Estimated life of machine (years)	10	12
	Rs.	Rs
Cost of machine	3,00,000	5,00,000
Cost of indirect materials p.a.	12,000	16,000
Estimated savings in scrap p.a.	20,000	30,000
Additional cost of maintenance p.a.	14,000	22,000
Additional cost of supervision p.a.	24,000	32,000
Estimated savings in direct wages:		
Employees not required (number)	150	200
Wages per employee p.a.	1,200	1,200

Taxation is to be regarded as 50% of profit (ignore depreciation for calculation of tax). Which model would you recommend?

Solution :

Profitability Statement		
Particulars	Machine Damsel Rs.	Machine Shylock Rs.
Savings		
Estimated savings in scrap	20,000	30,000
Estimated savings in direct wages	1,80,000	2,40,000
Total savings (A)	2,00,000	2,70,000
Less : Expenses		
Cost of Indirect material	12,000	16,000
Additional Cost of Supervision	24,000	32,000
Additional Cost of maintenance	14,000	22,000
Total savings (B)	50,000	70,000
Saving before depreciation (A – B = C)	1,50,000	2,00,000
Less : Tax at 50 %	75,000	1,00,000
Annual cash Inflow	75,000	1,00,000
Payback period = Initial Investment	3,00,000	5,00,000
Annual Cash inflow	75,000	1,00,000
	4 years	5 years
Machine Damsel is preferable as it has a shorter pay-back period.		

PROBLEM NO : 5

Using the information given below compute the pay-back period under (a) Traditional Pay-back period (b) Discounted pay-back period.

		Rs.
Initial Outlay		80,000
Estimated life	5 years	

Profit after tax End of the years	Year 1	
	2	6,000
	3	14,000
	4	24,000
	5	16,000
		Nil

Depreciation has been calculated under straight line method. The cost of capital may be taken 20% p.a and the PV of RS.1 at 20% p.a is given below.

Year	1	2	3	4	5
P.V.factor	.83	.69	.58	.48	.40

Solution :

Year	PAT Rs.	Add Depreciation Rs.	Profit Before Depreciation but after tax Rs.	P/V factor at 20%	Present Value
1	6,000	+16,000	= 22,000	.83	18,260
2	14,000	+16,000	= 30,000	.69	20,700
3	24,000	+16,000	= 40,000	.58	23,200
4	16,000	+16,000	= 22,000	.48	15,360
5	Nil	+16,000	= 16,000	.40	6,400
				Total present value	83,920
				Less: Initial investment	80,000
				Net Present Value	3,920

(a) Traditional Pay-back period

I year	Rs.22,000
II year	Rs.30,000
Amount recovered for 2 years	Rs.52,000
Balance amount	Rs.28,000
Initial outlay	Rs.80,000

III year profit is Rs.40,000. But we require only Rs.28,000 to meet the original investment of Rs.80,000.

$$= \frac{12 \text{ months}}{40{,}000} \times 28{,}000$$

Payback period = 2 years 8 months

(b) Discounted pay-back period

I year	18,260
II year	20,700
III year	23,000

IV year 15,360

77,520

Balance (Rs.) 2,480

In the V year cash inflow is Rs.6400, but actually we require only Rs.2480 to meet the original investment of Rs.80,000

$$= \frac{12 \text{ months}}{64{,}000} \times 2{,}480$$

Pay back period = 4 years 4 months

Note: Depreciation

$$\frac{\text{Cost}}{\text{Life}} = \frac{80{,}000}{5} = 16{,}000$$

PROBLEM NO : 6

Rank the following projects on the basis of

(a) Pay back

(b) Accounting rate of return method

(c) Net present value

Particulars	Year	Project A Rs.	Project B Rs.	Project C Rs.
Investment	0	30,000	30,000	30,000
Annual Savings	I	13,800	36,150	-
	II	13,800	-	-
	III	13,800	-	46,827

Discount factor for the year I,II,III, are 0.909,0.826,0.751 respectively.

Solution :

(A) Pay Back

Year	Project A Cash inflows (Rs)	Cumulative Cash inflows (Rs)	Project B Cash inflows (Rs)	Project C Cash Rs.
1	13,800	13,800	36,150	-
2	13,800	27,600	-	-
3	13,800	41,400	-	46,827

(a) I year 13,800+II year 13,800 = 27,600

Balance = 2,400

30,000

$$= \frac{12}{} \times 2400 = 2 \text{ months } 8 \text{days}$$

$$\frac{13,800}{}$$

= 2 years 2months 8 days

(b) $= \frac{12}{36,150} \times 30,000 = 10$ months

(c) $= \frac{12}{48,827} \times 30,000 = 7$ months 23 days

Results

A : 2Years 2 months 8 day

B : 10 Months

C : 7 months 23 days

(B) Accounting Rate of Return Method

$$= \frac{\text{Return}}{\text{Original investment}} \times 100$$

Project: A $= \frac{13,800}{30,000} \times 100 = 46\%$

Project: B $= \frac{12,050}{30,000} \times 100 = 40.16\%$

Project C $= \frac{15,609}{30,000} \times 100 = 52.03\%$

(C) Net Present Value

If cost of capital detail is not given in the problem, we have to assume 10% as cut off rate.

Year Rs.	I Project A cash Inflows Rs.	II P.V. Factor At 10%	III Discounted Cash Inflow Rs.	I Project B cash Inflows Rs.	II P.V. Factor At 10%	III Discounted Cash Inflow Rs.	I Project C cash Inflows Rs.	II P.V. Factor At 10%	III Discounted Cash Inflow Rs.
1	13,800	0.909	12,544.20	36,150	0.909	32,860	-	0.751	-
2	13,800	0.826	11,398.80	-	-	-	-	-	-
3	13,800	0.751	10,363.80	-	-	-	46,827	-	35,167
Total present Value			34,306.80			32,860			35,167
Less: Initial Cost			30,000.00			30,000			30,000
Net Present Value			4,306.80			2,860			5,167

Ranking Table

Project	Pay back	Accounting Rate of Return	NPV
A	III	II	II
B	II	III	III
C	I	I	I

As per the above Ranking table project C is preferable. It gets Ist rank as in the application of all the three techniques. So it is recommended.

PROBLEM NO : 7

Initial investment : Rs.60,000
Life of the Asset : 4 years
Estimated net annual Cash Flows
I Year Rs.15,000
II Year Rs.20,000
III Year Rs.30,000
IV Year Rs.20,000
Calculate the internal rate of return.

Solution :

Present value of Rs.1 due in 'n' number of years.

Year	P/V factor at 10%	P/V Factor at 12%	P/V factor at 14%	P/V factor at 15%
1	0.909	0.892	0.877	0.869
2	0.826	0.797	0.769	0.756
3	0.751	0.711	0.674	0.657
4	0.683	0.635	0.592	0.571

Statement showing cash inflows at various Discount rates of 10%, 12%, 14% and 15%

Year Rs.	Annual cash Inflows Rs.	Discount Factor At 10%	Present Value Rs.	Discount Factor At 12%	Present Value Rs.	Discount Factor At 14%	Present Value Rs.	Discount Factor At 15%	Present Value Rs.
1	15,000	0.909	13,635	0.892	13,380	0.877	13,155	0.869	13,035
2	20,000	0.856	17,120	0.797	15,940	0.769	15,380	0.756	15,120
3	30,000	0.751	22,530	0.711	21,330	0.674	20,220	0.657	19,710

4	20,000	0.683	13,660	0.635	12,700	0.592	11,840	0.571	11,420
			66,945		63,350		60,595		59,285

At the time of applying 14% of Discount rate, the present value of cash inflows, more or less equal to outflows. So 14% is taken as the Internal Rate of Return. If we want the exact IRR the following techniques will be applicable.

At 14% total present value = 60,595
At 15% total present value = 59,285
1310

For the difference of 1,310, the difference in rate = 1%
For a difference of 595, what will be the difference in rate?

$$= \frac{1}{1,310} \text{ X } 595 = 0.45$$

Internal Rate of Return = 14%+0.45% = 14.45%

Exact IRR= 14.45%

PROBLEM NO : 8

The following data is pertaining to a capital investment:

Initial investment: Rs.6, 00,000
Life of the Asset: 4 years
Estimated net annual Cash Flows:
1 Year = Rs.1, 50,000
2 Year = Rs.2, 00,000
3 Year = Rs.3, 00,000
4 Year = Rs.2, 00,000

Calculate the internal rate of return.

Solution :

Statement showing cash flows at various Discount rates of 10%, 12%, 14% and 15%.

Year	Annual cash Inflows	Discount Factor At 10%	Discount Value (Rs.)	Discount Factor At 12%	Discount Value (Rs.)
1	1,50,000	0.909	1,36,350	0.893	1,33,950
2	2,00,000	0.826	1,65,200	0.797	1,59,400
3	3,00,000	0.751	2,25,300	0.712	2,13,600
4	2,00,000	0.683	1,36,600	0.636	1,27,200
			6,63,450		**6,34,150**

Year	Annual cash Inflows	Discount Factor At 14%	Discount Value (Rs.)	Discount Factor At 15%	Discount Value (Rs.)

1	1,50,000	0.877	1,31,550	0.869	1,30,350
2	2,00,000	0.769	1,53,800	0.756	1,51,200
3	3,00,000	0.675	2,02,500	0.657	1,97,100
4	2,00,000	0.592	1,18,400	0.571	1,14,200
			6,06,250		**5,92,850**

At the time of applying 14% of Discount rate, the sum of discounted cash inflow is more or less equal to the sum of Cash outflows. So 14% is taken as the Internal Rate of Return. In order to get the exact IRR means we have to employee the following techniques for this purpose.

At 14% of Discount rate a sum of present value = Rs.6, 06,250
At 15% of Discount rate a sum of present value = Rs.5, 92,850
Rs.13,400

For the difference of 13100 the difference in rate is = 1%
For the difference of 5950 what will be the difference in rate?

$$= \frac{1}{13,400} \times 6250 = 0.46$$

Internal Rate of Return = 14%+0.46%= 14.46%

Exact IRR = 14.46%

PROBLEM NO : 9

A company is considering two mutually exclusive projects. Both require an Initial investment of Rs. 50,000 each and have a life of 5 years. The cost of capital of the company is 10% and tax rate is 50%. The depreciation is charged on straight line method. The estimated net cash inflows (before depreciation and tax) of the two projects are as follows:

Year	Project A Rs.	Project B Rs.
1	20,000	30,000
2	22,000	27,000
3	28,000	22,000
4	25,000	25,000
5	30,000	20,000

Which project should be accepted as per NPV and IRR method? (Table showing Present Value Factor of an Annuity of Rs.1 may be provided on request).

Solution :

Statement of Cash Inflow

Project A

Year	Cash inflows Rs.	Less : Depreciation Rs.	Profit after Depreciation Rs.	Less tax 50% Rs.	PAT Rs.	Add Depreciation	Cash inflows Rs.
1	20,000	10,000	10,000	5,000	5,000	10,000	15,000
2	22,000	10,000	12,000	6,000	6,000	10,000	16,000
3	28,000	10,000	18,000	9,000	9,000	10,000	19,000
4	25,000	10,000	15,000	7,500	7,500	10,000	17,500
5	30,000	10,000	20,000	10,000	10,000	10,000	20,000

Statement of Discounted Cash Inflow

Year	Annual Cash Inflow (Rs)	Discounted factor Inflow	Discounted Cash Inflow (Rs)
1	15,000	0.909	13,636
2	16,000	0.826	13,216
3	19,000	0.751	14,269
4	17,500	0.683	11,952
5	20,000	0.621	12,420
		Sum of discounted cash inflow	65,493
		Less : Original Cost	50,000
		Net Present Value	**15,493**

Statement of Cash Inflow

Project B

Year	Cash inflows Rs.	Less : Depreciation Rs.	Profit after Depreciation Rs.	Less tax 50% Rs.	PAT Rs.	Add Depreciation	Cash inflows Rs.
1	30,000	-10,000	20,000	10,000	10,000	+10,000	20,000
2	37,000	-10,000	17,000	8,500	8,500	+10,000	18,500
3	22,000	-10,000	12,000	6,000	6,000	+10,000	16,000
4	25,000	-10,000	15,000	7,500	7,500	+10,000	17,500
5	20,000	-10,000	10,000	5,000	5,000	+10,000	15,000

Statement of Discounted Cash Inflow

Year	Annual Cash Inflow (Rs)	Discounted factor Inflow	Discounted Cash Inflow (Rs)
1	20,000	0.909	18,180
2	18,500	0.826	15,281
3	16,000	0.751	12,016
4	17,500	0.683	11,952
5	15,000	0.621	9,315
		Sum of discounted cash inflow	66,744
		Less : Original Cost	50,000
		Net Present Value	**16,744**

Computation of IRR :

Internal Rate of Return: Project A 21 %

Project B 23.1 %

Ranking Table

Project	NPV	IRR
A	II	II
B	I	I

According to the NPV and IRR point of view, project B should be accepted.

PROBLEM NO : 10

ABC Co. is considering two machines, only one of which can be purchased. The available data on the two machines is given below:

	Machine A	**Machine B**
Cost (Rs.)	48,000	85,000
life of the machine	5 Years	7 Years

Annual savings (after taxation)

Years	**Machine A (Rs)**	**Machine B (Rs)**

1	8,000	18,000
2	10,000	25,000
3	15,000	30,000
4	22,000	40,000
5	30,000	20,000

Neither machine will have any salvage value. The cost of capital is 10% Compute the profitability index for each machine. Based on the profitability index, which machine should be purchased?

Solution :

Calculation of profitability index

Year	Present value factor at 10%	Machine A Discounted cash inflow (Rs.)	Machine B Present value factor at 10%	Discounted cash inflow	
1	0.909	8,000	7,272	18,000	16,362
2	0.826	10,000	8,260	25,000	20,650
3	0.751	15,000	11,265	30,000	22,530
4	0.683	22,000	15026	40,000	27,320
5	0.721	30,000	21630	20,000	14,420
Sum of present value of cash inflow			**63,450**		**1,01,282**
					85,000

$$\text{Profitability Index} = \frac{\text{Present value of cash inflow}}{\text{Present value of cash outflow}}$$

$$PI = \frac{PVCIF}{PVCOF} = \frac{63,450}{48,000} = 1.32, \quad \frac{101.282}{85,000} = 1.19.$$

Conclusion: Based on PI values, machine A should be selected as its PI values are greater than that of machine B.

Module : 4

3.1 FinTech

Introduction to FinTech

A linguistic blend of two individual terms 'Finance' & 'Technology', FinTech is being used to denote the wide array of technological innovations that have a bearing on financial services.

FinTech is an umbrella term coined in the recent past to denote technological innovation having a bearing on financial services. According to Financial Stability Board (FSB), of the BIS, **"FinTech** is technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services".

Benefits of FinTech

- **Financial inclusion:** Individuals and businesses can access appropriate and affordable financial products and services in a timely manner. Recent example is establishing of Digital Banking Units.
- **Economical:** Lower costs as there are no physical branches, hence lesser people to pay in the chain of management and services.
- **Cost reduction:** The benefits of cost reduction can be passed on to customers in the form of low prices.
- **Higher speed:** With speed of internet.
- Fintech improves the efficiency by having more speed and less cost.
- Flexibility: People can carry out all kinds of operations from wherever and whenever they want in a very simple way. Personalized customer service.
- Regtech, or regulatory technology, is primarily concerned with automating financial firms' compliance procedures. Additionally, it provides quick and affordable management of massive data sets, including transaction records and

compliance records like corporate tax filings.

- Fintech give the opportunity of more customization. As the use of artificial learning, chatbots give room for better customer service.

Limitations of FinTech

- **Cyber security issues:** Internet connects different systems, thus threatening the surety of the systems.
- **Data Privacy issues:** Concerns about data collecting and data privacy will emerge as a result of the integration of new technologies with conventional systems in addition to cybersecurity.
- **Frauds and Scams:** The digital financial literacy is in younger stage and there huge variety of scams and frauds which are being done on the gullible people. So it's a dynamic problem. Fintech give the opportunity of more customization. As the use of artificial learning, chatbots give room for better customer service.

FinTech History and Evolution

- Technology-induced financial innovation has a long history.
- In the 1950s, credit cards appeared for the first time, followed by Automated Teller Machines (ATMs) in the 1960s.
- Electronic stock trading and banks' new data recording systems in 1970s and 1980s.
- e-commerce and online brokering in 1990s.
- .The online revolution in the last decade of the 20th century connected the world through the Internet, and enabled e-commerce, Internet banking and pioneering online payment platforms like PayPal.
- The next decade witnessed the emergence of smart technology. The smartphone materialised as a powerful computer in human palms, and the movement to app-based operating systems spurred innovation, unbundling and sharing of services.
- Bitcoin came as another important development in 2009.
- The present decade is dedicated to the 'rise of the robots', where the emergence of big and unconventional datasets has enabled AI to provide accurate

predictions and personalise banking.

- The 'new' FinTech sector gained momentum in its modern incarnation after the Global Financial Crisis(GFC) as FinTech entrepreneurs realised that banking services should be transparent, facilitative and economical. After the GFC, public perception of banks had deteriorated, as savings were diverted to subprime borrowing without adequate consumer protection. Many finance professionals confronted job losses or pay cuts, which inspired enterprising innovation as FinTechs. Also, tighter regulation of traditional banking after GFC supported the growth of the FinTech sector.1950s: Emergence of Credit Cards 1960s: ATM

4.1 DIGITAL CURRENCY

What Is a Digital Currency?

Digital currency is a form of currency that is available only in digital or electronic form. It is also called digital money, electronic money, electronic currency, or cybercash.

Understanding Digital Currencies

Digital currencies do not have physical attributes and are available only in digital form. Transactions involving digital currencies are made using computers or electronic wallets connected to the internet or designated networks. In contrast, physical currencies, such as banknotes and minted coins, are tangible, meaning they have definite physical attributes and characteristics. Transactions involving such currencies are made possible only when their holders have physical possession of these currencies.

Digital currencies have utility similar to physical currencies. They can be used to purchase goods and pay for services. They can also find restricted use among certain online communities, such as gaming sites, gambling portals, or social networks.

Digital currencies also enable instant transactions that can be seamlessly executed across borders. For instance, it is possible for a person located in the United States to make payments in digital currency to a counterparty residing in Singapore, provided they are both connected to the same network.

Characteristics of Digital Currencies

As mentioned earlier, digital currencies only exist in digital form. They do not have a physical equivalent. Digital currencies can be centralized or decentralized. Fiat currency, which exists in physical form, is a centralized system of production and distribution by a central bank and government agencies. Prominent cryptocurrencies, such as Bitcoin and Ethereum, are examples of decentralized digital currency systems.

Digital currencies can transfer value. Using digital currencies requires a mental shift in the existing framework for currencies, where they are associated with sale and purchase transactions for goods and services.

Digital currencies, however, extend the concept. For example, a gaming network token can extend the life of a player or provide them with extra superpowers. This is not a purchase or sale transaction but, instead, represents a transfer of value

Types of Digital Currencies

Digital currency is an overarching term that can be used to describe different types of currencies that exist in the electronic realm. Broadly, there are three different types of currencies:

- **Cryptocurrencies:** Cryptocurrencies are digital currencies that use cryptography to secure and verify transactions in a network. Cryptography is also used to manage and control the creation of such currencies. Bitcoin and Ethereum are examples of cryptocurrencies. Depending on the jurisdiction, cryptocurrencies may or may not be regulated.
- **Virtual Currencies:** Virtual currencies are unregulated digital currencies

controlled by developers or a founding organization consisting of various stakeholders involved in the process. Virtual currencies can also be algorithmically controlled by a defined network protocol. An example of a virtual currency is a gaming network token whose economics is defined and controlled by developers.

- **Central Bank Digital Currencies:** Central bank digital currencies (CBDCs) are regulated digital currencies issued by the central bank of a country. A CBDC can be a supplement or a replacement to traditional fiat currency. Unlike fiat currency, which exists in both physical and digital form, a CBDC exists purely in digital form. England, Sweden, and Uruguay are a few of the nations that are considering plans to launch a digital version of their native fiat currencies.

Digital Currencies	Virtual Currencies	Crypto currencies
Regulated or unregulated currency that is available only in digital or electronic form.	An unregulated digital currency that is controlled by its developer(s), its founding organization, or its defined network protocol.	A virtual currency that uses cryptography to secure and verify transactions as well as to manage and control the creation of new currency units.

Pros and Cons of Digital Currencies

Pros

- Faster transaction times.
- Do not require physical manufacturing.
- Lower transaction costs.
- Make it easier to implement monetary and fiscal policy.
- Offers greater privacy than other forms of currency.

Cons

- Can be difficult to store and use.
- Can be hacked.
- Can have volatile prices that result in lost value.
- May not allow for irrevocability of transactions.
- Still has limited acceptability.

6.1 HURDLE RATE

What is a Hurdle Rate

A hurdle rate, which is also known as the minimum acceptable rate of return (MARR), is the minimum required rate of return or target rate that investors are expecting to receive on an investment. The rate is determined by assessing the cost of capital, risks involved, current opportunities in business expansion, rates of return for similar investments, and other factors that could directly affect an investment.

Before accepting and implementing a certain investment project, its internal rate of return (IRR) should be equal to or greater than the hurdle rate. Any potential investments must possess a return rate that is higher than the hurdle rate in order for it to be acceptable in the long run.

5.1 CRYPTOCURRENCY

The nature of cryptocurrency

Cryptocurrency in its purest form is a peer-to-peer version of electronic cash. It allows online payments to be sent directly from one party to another without going through a financial institution. The network time-stamps transactions using cryptographic proof of work. The proof-of-work Bitcoin protocol is basically a contest for decoding and an incentive to reward those who participate. For Bitcoin, first participant to crack the code will be rewarded with the newly created coins. This contest will form a record of the transactions that cannot be changed without redoing the proof of work.

Cryptocurrency is a subset of digital currency. Examples of the many digital currencies are air miles issued by airlines, game tokens for computer games and online casinos, Brixton Pound to be spent only in the Brixton local community in the Greater London area, and many other forms that can be exchanged for virtual and physical objects in a closed system and, in the case of an open system, exchanged for fiat currency

The beginning: eCash

Commercially, it all began with DigiCash, Inc.'s eCash system in 1990, based on two papers by its founder (Chaum, 1983; Chaum et al., 1992). Payments were transferred online and offline using cryptographic protocols to prevent double-spending. The cryptographic protocols also used blind signatures to protect the privacy of its users.

As the first cryptocurrency, the eCash system was available via various banks and smartcards in various countries like the United States and Finland. It slowly evolved into the current form of cryptocurrencies with many refinements by various software developers over the last 20 years.

eCash was a centralized system owned by DigiCash, Inc. and later eCash Technologies. However, after it was acquired by InfoSpace in 1999, eCash and cryptocurrency faded into the background.

Revival of cryptocurrency

At the onset of the global financial crisis in 2008, interest on cryptocurrency was revived. Cryptocurrency had the potential to counter a few problems associated with the fiat currency system, argued Szabo (2008) in a blog post just at the beginning of the global financial crisis. Given that it is cumbersome to transact using commodities, the concept of bitgold was mooted. As the name suggests, there is gold to be mined and bit recorded on a digital register. The digital record would resolve the issues of a trusted third party, and in his own words.

Despite sounding technical, what Szabo described was a simple protocol that requires participants to spend resources to mine the digital gold or bit gold, be rewarded, and in the process validate the public digital register. What differentiated his approach from failed digital currencies of the past were the timing of the financial crisis and the distributed nature of the protocol. The reward to the miners was one innovation and the free access to digital record for the users was another. One of the reasons is that the nature of the Internet makes collecting mandatory fees much harder, while voluntary subsidy is much easier. Therefore, there must be no barrier to access content or digital record, and there must be ease of use and voluntary payments.

The rise of Bitcoin

An example of a cryptocurrency is bitcoins. Satoshi Nakamoto published a paper on the Web in 2008 for a peer-to-peer electronic cash system. Despite many efforts, the identity of Satoshi remains unknown to the public and it is not known whether Satoshi is a group or a person.

The cryptocurrency invented by Satoshi Nakamoto, called bitcoins, is run using open-source software. It can be downloaded by anyone, and the system runs on a decentralized peer-to-peer network. It is not only decentralized but also supposedly fully distributed. That means that every node or computer terminal is connected to each other. Every node can leave and rejoin the network at will and will later accept the longest proof of work known as the block chain as the authoritative record.

This longest blockchain is proof of what has happened while these nodes were gone. Cryptocurrency is mysterious and misunderstood for a few reasons.

First, no one knows who is really behind some of these cryptocurrency systems. It was designed so that third-party trust is not needed and sometimes there is no legal entity behind it but open-source software.

Second, many have jokingly remarked that Bitcoin sounded more like “big con” especially after the collapse of Mt. Gox. But it is important to note that Mt. Gox was merely a financial intermediary, being just one of many unregulated exchanges that trade in Bitcoins. Mt. Gox was not part the Bitcoin system itself. It is a complex currency system to the men in the street and therein lies the confusion.

Third, cryptocurrency involves mining or proof of work. There are rewards for mining and the reward is given to the first who can solve a cryptography problem.The degree of difficulty of the problem will ensure that the timing to solve the problem is approximately 10 min for Bitcoin. Cryptocurrency cleverly solves the double spending problem so that every cryptocurrency can be spent only once. It is a financial technology and it involves financial regulation but therein lies the difficulty in execution and understanding even for the professionals. That is why it is an area of great interest to researchers, regulators, investors, and merchants and it is hitting the headlines regularly.

The general arguments for a successful distributed cryptocurrency are as follows:

1. Open-source software: A core and trusted group of developers is essential to verify

the code and possible changes for adoption by the network.

2. Decentralized: Even if it is not fully distributed, it is essential that it is not controlled by a single group of person or entity.

3. Peer-to-peer: While the idea is not to have intermediaries, there is a possibility of pools of sub networks forming.

4. Global: The currency is global and this is a very positive point and workable for financial integration with or without smart contracts among the parties.

5. Fast: The speed of transaction can be faster and confirmation time can be shortened.

6. Reliability: The advantage is that there is no settlement risk and it is nonrepudiable. The savings in cost of a large settlement team for financial activities can be potentially huge.

7. Secure: Privacy architecture can be better designed incorporating proof of identity with encryption. If that is done, the issues surrounding Know Your Customer/Client (KYC) and anti-money laundering and terrorist financing (AML/TF) will be resolved.

8. Sophisticated and flexible: The system will be able to cater to and support all types of assets, financial instruments, and markets.

9. Automated: Algorithm execution for payments and contracts can be easily Incorporated.

10. Scalable: The system can be used by millions of users.

11. Platform for integration: It can be designed to integrate digital finance and digital law with an ecosystem to support smart contracts with financial transactions. Customized agreements can be between multiple parties, containing user-defined scripted clauses, hooks, and variables.

7.1 FINANCIAL MODELLING

Introduction to Financial Modeling :

A financial model has become a critical tool used by organizations to understand business risks and make important strategic decisions. An effective model is robust and flexible, yet user-friendly, so that it can be used to analyze the impact of operational parameters on the value and viability of a business.

What is a financial model used for?

The output of a financial model is used for decision making and performing financial analysis, whether inside or outside of the company. Inside a company, executives will use financial models to make decisions about:

- Raising capital (debt and/or equity)
- Making acquisitions (businesses and/or assets)
- Growing the business (i.e. opening new stores, entering new markets, etc.)
- Selling or divesting assets and business units
- Budgeting and forecasting (planning for the years ahead)
- Capital allocation (priority of which projects to invest in)
- Valuing a business

Who builds financial models? (Jobs and career)

There are many different types of professionals that build financial models. The most common types of career tracks are investment banking, equity research, corporate development, FP&A, and accounting (due diligence, transaction advisory, valuations, etc).

To learn more about jobs and careers that require building financial models, explore

MULTI CHOICE QUESTIONS

1. What does the term “Fintech” stand for?

   (A) Financial Techniques (B) Financial Technologies

   (C) Financial Transactions (D) Financial Terminologies

2. Which of the following is NOT a common application of Fintech?

   (A) Online Banking (B) Cryptocurrency Trading

   (C) Agriculture Techniques (D) Robo-Advisor

3. Which among the following is the most flexible crypto currency?

   (A) Ether (B) Lite coin (C) Ripple (D) Bitcoin

4. Bitcoin is a crypto currency invented in?

   (A)2007 (B)2008 (C)2009 (D)2010

5. Transactions are verified by network nodes through cryptography and recorded in a public distributed ledger is called a?

(A) Crypto currency wallet (B) Block chain

(C) Nodes (D) Crypto currency

LETS SUM UP

Fintech is having global impact on the provision of financial services. Mobile payments have been a key early developer with broad implications for inclusion. New entrants are challenging incumbents who are responding. The evolving market structure could boost competition and efficiency, while raising new risks to financial stability and integrity. Balancing competing policy priorities is a key challenge.

ANSWERS TO CHECK YOUR PROGRESS

Module 1	1. (B) Use of capital on assets to receive returns 2. (C) Investment decision 3. (B) Financing 4. (B) To maximise the owner's wealth 5. (C) Long terms assets
Module 2	1. (A) Investment Decision 2. (A) Long-term Decisions 3. (B) Irreversible 4. (D) Rate of Cash Discount 5. (A) Capital Budgeting
Module 3	1. (D) 5 years 2. (D) 3 years 9 months 3. (B). Payback period. 4. (C) 16.8% 5. (A) 15% and 25%
Module 4	1. (A) 1%. 2. (C) 8% 3. (A) 16.01%

	4. (D) IRR<Cost of Capital 5. (B) 0.907
Module 5	1. (B) Financial Technologies 2. (C) Agriculture Techniques 3. (A) Ether 4. (D)2010 5. (B) Block chain

UNIT ACTIVITIES :

(I) Short Answers :

1. What is meant by capital budgeting?
2. List out the various methods of capital budgeting.
3. What is capital expenditure budget?
4. What is meant by pay-back period?
5. What is cut-off rate?
6. Write short notes on NPV as a technique of capital budgeting.
7. What is meant by IRR?
9. What are the kinds of capital budgeting decision?

(II) Essay Type Answers :

1.Explain the various methods of evaluating capital expenditure decision. Describe the merit and demerits of each of these methods.

2. What is capital expenditure budget? Why it necessary? What are its essential features?

3. Compare and contrast internal rate of return and net present value techniques. Which method will you recommended for evaluating investment? explain

4. "Capital expenditure decisions are by far the most important decision in the field of financial management "elucidate

5. "Pay back method is a test of liquidity and profitability "discuss.

6. Outline the financial management techniques of capital investment in fixed assets

7. What is discounted cash inflow method? What are its merits and demerits?

8. What are the principles of capital budgeting?

9.What are the factors influencing capital expenditure decisions?

Glossary :	
Capital Budget	It is the firm's formal plan for the investment of long-term funds in purchase of fixed assets.
Accept-Reject criterion	Evaluation of Capital Budgeting proposals to determine whether the project under consideration satisfies the minimum acceptance standard and should be accepted.
Capital Budgeting:	The process of generating, evaluating, selecting and following up on capital expenditure projects. The methods employed to evaluate the worth of the capital expenditure proposals are known as Capital Budgeting techniques
Cash Outflows / Outlay	Investment to be made for acquiring an asset from which benefits would be available beyond one year.
Cash Inflows	Expected benefits ever a project during its life time.
Net Present Value	- It is the net present value of investment decision, calculated by present value of cash inflows minus present value of cash outflows. Discounting to be done at the cost of capital.
Profitability Index	- It is the ratio between PV of inflows and PV of outflows. Also called Benefit Cost Ratio (B/C ratio).
Internal Rate of Return	It is the rate of discount that equalizes the PV of inflows with the PV of outflows.
Aggregate Fintech Activity Index	Indicator of fintech activity across countries developed in the Fintech Activity Note (Didier et al. 2022), measured from 2014 to 2018, taking into consideration four activities: (a) equity investments in fintech companies, (b) use of fintech credit (facilitated by electronic or online platforms), (c) use of digital payment services byhouseholds and firms, and (d) downloads of finance smartphone apps.

References :

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Unit-3

Cost of capital

STAGE-1

Cost of Capital

Cost of Capital –Cost of specific sources of capital – Cost of equity capital – Cost of debt – Cost of preference – Cost of retained earnings - weighted average cost of capital. EBIT -EPS Analysis -Leverages

Unit Module Structuring

1. Introduction of Cost of capital
2. Computation of Cost of specific sources of capital
    - Cost of equity capital
    - Cost of debt
    - Cost of preference
    - Cost of retained earnings
3. Computation of Weighted average cost of capital.
4. EBIT-EPS analysis
5. Leverage

Unit Objectives

- Discuss the concept and importance of cost of capital
- Distinguish among various classes of cost of capital
- Illustrate the computation of cost of long-term debt, preferences shares, equity shares and retained earnings
- Discuss and illustrate the various weighting approaches and the weighted average cost of capital (WACC)
- Narrate misconceptions about cost of capital.

Table of Contents

Module: 1

Introduction to Cost of Capital

Dear student, we learn about this unit's cost of capital.it is the most important of financial management and sophisticated techniques employed by the financial manager to evaluate the profitability of the capital investment proposals. Generally, the cost of capital reflects the opportunity cost to investors, such as debt lenders and equity shareholders, at which the implied return is deemed sufficient given the risk attributable to an investment.

The Cost of Capital is the minimum rate of return, or hurdle rate, required on a particular investment for the incremental risk undertaken to be rational from a risk-reward standpoint.

- 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.
- For example, the cost of raising funds through issuing equity shares is different from that of raising funds through issuing preference shares.
- Cost of capital is also referred to as the breakeven rate, minimum rate, cut-off rate, target rate, hurdle rate, standard rate, etc. Hence cost of capital may be defined according to the operational as well as the economic sense.

In the operational sense, the cost of capital is the discount rate used to determine the present value of estimated future cash inflows of a project. thus, it is the rate of return a firm must earn on a project to maintain its present market value.

In the economic sense, it is the weighted average cost of capital, i.e. the cost of borrowing funds. A firm raises funds from different sources. The cost of each source is called the specific cost of capital. The average of each specific source is referred to as the weighted average cost of capital.

1. Introduction to Cost of Capital

1.1 **Meaning of cost of capital**

- The cost of capital is the minimum rate of return a firm can earn on its investment. The sources of capital of a firm must be in the form of preference shares, equity shares, debt, and retained earnings.
- In the modern financial world the concept of cost of capital is very essential in the areas of financial management. Simply cost of capital of a firm is the weighted average cost of their different sources of financing, it indicates of higher rate of cost of capital.

1.2 Definition of cost of capital

Hampton J: The cost of capital may be defined as "the rate of return the firm requires from investment to increase the value of the firm in the marketplace."

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."

Solomon Ezra: "Cost of Capital is the minimum required rate of earnings or the cut-off rate of capital expenditure. "

According to the definition of John J. Hampton " Cost of capital is the rate of return the firm required from investment in order to increase the value of the firm in the market place".

According to the definition by William and Donaldson, "Cost of capital may be defined as the rate that must be earned on the net proceeds to provide the cost elements of the burden at the time they are due".

2.Importance of Cost of Capital

The cost of capital is very important in financial management and plays a crucial role in the following areas

i. **Determination of Capital budgeting decisions:**

The cost of capital is used for discounting cash flows under the Net Present Value method for evaluating investment proposals. So, it is very useful in capital budgeting

decisions by financial managers.

ii. To assist Capital structure decisions:

An optimal capital structure is a structure in which the value of the firm is maximum and the cost of capital is the lowest. So, the cost of capital is crucial in designing optimal capital structure. That minimizes the risk and maximizes returns.

iii. To Evaluate Financial Performance:

The cost of capital is used to evaluate the financial performance of top management. The actual profitability is compared to the expected and actual cost of capital of funds and if profit is greater than the cost of capital the performance may be said to be satisfactory.

iv. Basic for making Other financial decisions:

The cost of capital is also useful in making such other financial decisions as dividend policy, capitalization of profits, making the rights issue, assisting project expansion, etc.

2.1 Classifications of cost of capital

There is no fixed base of classification of cost of capital. It varies according to need, process, and purpose. It may be classified as follows

1. Explicit Cost and Implicit Cost
2. Average Cost and Marginal Cost
3. Future Cost and Historical Cost
4. Specific Cost and Combined Cost

1. Explicit Cost and Implicit Cost :

Explicit costs relate to the raising of funds and implicit costs relate to the usage of funds. Explicit costs are costs that are borne by the company, such as wages, rent, or materials. Implicit costs are the opportunity costs of
resources that the company already owns and uses in its operations, such as expanding a factory on land it already owns.

2. Average Cost and Marginal Cost:

The average cost is the weighted average of the costs of each component of funds. After ascertaining the costs of each source of capital, appropriate weights are

assigned to each component of capital. The marginal cost of capital is the weighted average cost of new funds raised by the firms.

3. Future Cost and Historical Cost:

In financial decision-making, the relevant costs are future costs. Future cost i.e. expected cost of funds to finance the projects is ascertained with the help of historical costs.

4. Specific Cost and Combined Cost:

The costs of individual components of capital are specific costs of capital. The combined cost of capital is the average cost of capital as it is inclusive of the cost of capital from all sources. In capital budgeting decisions, the combined cost of capital is used for accepting/rejecting the proposals.

LETS SUM UP

Dear students, we saw this section have seen following importance in the cost of capital

a) Importance for the Development of Financial Performance The Cost of capital is one of the important factors affecting the budget, capital structure, and enterprise value. Therefore, it helps to evaluate the financial performance of the company.

b) Importance for other financial decisions In addition to the above points, cost of capital is also used in other areas such as market value of shares, earning capacity of securities, etc. Therefore, it plays an important role in finance al management.

Multi-Disciplinary Questions :

1. Cost of equity share or debt is called ___

(A) Related cost of capital (B) Easy to calculate the cost of capital

(C) Specific cost of capital (D) Burden on the shareholder

2. In which of the cost of the following method of equity capital is computed by dividing the dividend by market price per share or net proceeds per share?

(A) Price Earning Method (B) Adjusted Price Method

(C) Adjusted Dividend Method (D) Dividend Yield Method

3. Cost of capital is equal to the required return rate on equity in case if investors are

only___

(A) Valuation Manager (B) Common Stockholders

(C) Asset Seller (D) Equity Dealer

4. For each component of capital, a required rate of return is considered as:

(A) Component cost (B) Evaluating cost

(C) Asset cost (D) Asset depreciation value

5. Which of the following is a controllable factor affecting the cost of capital of the firm?

(A) Dividend policy (B) Level of interest rates

(C) Tax rates (D) All of the above

Module: 2

3. COMPUTATION OF COST OF SPECIFIC SOURCES OF CAPITAL

Computation of the cost of capital of a firm involves the following

3.1. Computation of the cost of each specific source of finance

3.2. Computation of weighted average cost of capital.

3.1. Computation of the cost of each specific source of finance

3.1.1) Cost of Debt

3.1.2) Cost of Preference share Capital

3.1.3) Cost of Equity Capital

3.1.4) Cost Retained earnings

3.1.1) Cost of debt

a) Debt issued at par, at premium or discount :

- Cost of Irredeemable Debt :- (Before Tax)

Irredeemable debts are those which is not redeemable during the entire lifetime of the company.

$$\text{Cost of debt (K}\mathbf{d}\text{)} = \frac{\mathbf{1}}{\boldsymbol{NP}}$$

K**d** = Cost of debt

I = Interest, NP = Net Proceeds

i) When debt is issued at par:

NP = Face value – Issue Expenses

ii) When debt is issued at premium

NP = Face value + Premium – Issue expenses

iii) When debt is issued at discount

NP = Face value – Discount – Issue expenses

After tax cost of debt :

$$Kd = \frac{1-T}{NP}$$

I) Cost of redeemable debt : (Before tax)

Kd (Before tax) = $\frac{I+(P-NP)/n}{(P+NP)/2}$

I = Annual Interest Payment

P = Par value of Debentures

NP = Net proceeds of debentures

n = Number of years to maturity.

II)Cost of redeemable debt : (After tax)

Kd (After tax) = Kd (Before tax) x (1 – T)

Cost of Existing Debt :

The formula for computing the cost of existing debt is as follows.

Cost of existing debt (Before tax) = $\frac{Annual\ cost\ before\ tax}{Average\ value\ of\ debt\ (Av)}$

Note: Annual cost before tax

Interest per annum	xx
Add: Annual amortization of the differences	
Between face value and net realizable value	xx
i.e., $[\frac{Face\ value-Realizable\ price}{No\ of\ years}]$	
Annual cost before tax	xx

Average value of debt

The average value of debt can be calculated with the help of the following formula.

AV = $\frac{NP+RV}{2}$

Real cost of debt = $\frac{1+Normal\ cost\ of\ capital}{1+Inflation\ rate}$

AV = Average value

NP = Net proceeds

RV = Redemption value

Cost of zero coupon Bonds

The rate of interest is not specified in the zero-coupon bonds. The cost of zero coupons is calculated by the trial and error method using present value tables. i.e., which rate equalizes, the present value of outflow to the present value of inflows.

Inflation Adjusted Cost of Debt

$$\text{Real cost of Debt} = \frac{1+Normal\ cost\ of\ capital}{1+Inflation\ rate}$$

3.1.2 Cost of preference share capital

Normally a fixed rate of dividend is payable on preference shares. But in the practical sense preference dividends are regularly paid by the companies when they earn a sufficient amount of profit.

A. Cost of irredeemable preference capital

B. Cost of redeemable preference capital

A. Cost of irredeemable preference capital

The cost of irredeemable preference capital is calculated by applying the following formula.

$$Kp = \frac{DP}{NP}$$

Kp = cost of preference share capital

DP = Fixed preference dividend

NP = Net proceeds of preference shares

i.e., Net amount realized from the issue of preference shares.

i) When preference shares are issued at par:

$$Kp = \frac{DP}{NP}$$

[Note : NP = Face value – Issue expenses]

ii) When preference shares are issued at a premium:

$$Kp = \frac{DP}{NP}$$

[Note : Face value + Premium – Issue Expenses]

iii) When preference shares are issued at a discount:

$$Kp = \frac{DP}{NP}$$

[Note : Face value – Discount – Issue Expenses]

B. Cost of redeemable preference shares

Redeemable preference shares are those which are to be redeemed after the expiry of a specified period. The formula for computation of the cost of redeemable preference shares is as follows

$$Kp = \frac{D+\frac{(P-NP)}{n}}{(N+NP)/2}$$

3.1.3. Cost of Equity Capital

The cost of Equity capital is a difficult task. it's possible to Any person can invest money in equity shares, they expect to receive dividends. The market price of equity shares also depends on the return expected by the shareholders.

Therefore cost of equity capital may be defined as the minimum rate of return that a firm must earn on its investment, and also the market price of the equity shares on unchanged.

Computation of the cost of equity capital may be divided into the following categories

A. The external equity or new issue of equity shares

B. The retained earnings.

A. The external equity or new issue of equity shares

i) Dividend price method or dividend yield method

The cost of equity capital is calculated as follows.

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

Where Ke = Cost of equity capital

D = Expected dividend per share

NP = Net proceeds per share (in case of new issue)

MP = Market price per share (in case of existing shares)

ii. Dividend price plus growth (D/P + g) approach

Where, $Ke = \frac{D}{NP} + g$ or $\frac{D}{MP}$ + g

Ke = Cost of equity capital

D = Expected dividend per share

NP = Net proceeds per share (in case of new issue)

MP = Market price per share (in case of existing shares)

g = Growth rate in dividends

iii. Earnings price (E/P) approach

where, Ke = $\frac{EPS}{NP}$ or $\frac{EPS}{MP}$

Ke = Cost of equity capital

EP = Earnings per share

NP = Net proceeds (in case of new issue)

MP = Market price (in case of existing shares)

iv. Realised yield method

According to this method, the cost of equity capital is calculated based on the return realized to the shareholders from the company. The dividends and the capital gains are only the return to the shareholders. The cost of equity capital is determined rate at which the present value of inflows is equal to the present value of outflows. The exact rate is found out by trial and error method.

3.1.4. Cost of Retained Earnings

The term retained earnings refers to a certain portion of the profits retained by the company for future development, business use, and expansion known as retained earnings

where,

Kr = Ke (1-t) (1-b)

Kr = Cost of retained earnings

Ke = Cost of equity capital

t = Tax rate

b = Brokerage, I = Interest

A) Capital asset pricing model: (CAPM)

It is an economic model that describes how securities are priced in the marketplace. It considers the risk element in determining the cost of equity capital. Under this method, the cost of equity capital is the return required by the investors. Normally it involves two elements.

i) The risk-free return (R)

ii) The premium for risk (Pr)

Therefore, the cost of equity capital may be calculated in the following.

Ke= Rf+ Pr

Computation of Pr = β (Rm - Rf)

Problem 1:

Mr.Kumar purchased shares in Saradha Textiles Ltd. at Rs.317 per share, in January 2014. She held them for five years and sold them in January 2021 for Rs.500.

The dividend per share received by himself was as under :

2015 – Rs. 15; 2016 – Rs. 15; 2017 – Rs.18

2018 – Rs.18; 2019 – Rs.20

Calculate the cost of equity capital

Solution: Here cost of equity capital is calculated under the internal rate of return (IRR) method. It is the rate at which the total present value of in-flows is equal to the total present value of outflows. The IRR is calculated by trial and error method.

Calculations of the Present value of Inflows are 10% and 15%

Year	Inflows Rs	P.V. factor at 10%	Present Value of inflows at 10%	Inflows	P.V. factor at 15%	Present value of inflows at 15%
2015	15	.909	13.635	15	.870	13.050
2016	15	.826	12.390	18	.756	11.340
2017	18	.751	13.518	18	.658	11.844
2018	18	.683	12.294	18	.572	10.296
2019	20	.621	12.420	20	.497	9.940
2020	500	.564	282.000	500	.432	216.000
Total Present value =			346.257	TPV =		272.470

Present value of outflow = Cost of the share = Rs.317

At 10% total present value of inflows = 346.257

At 5% total present value of inflows = 272.470

Decrease in TPV = 73.787

The IRR lies between 10% and 15%

It is found as follows:

For a decrease of 73.787, increase in rate = 5% (15% - 10%)

For a decrease of 29.257, (346.257 – 317) increase in rate

$= \frac{5}{73.787}$ x 29.257 = 1.98

Internal Rate of return =10 + 1.98 = 11.98%

At this rate, the total present value of inflows will be Rs.317

@ Cost of equity capital = IRR = 11.98%10.

Problem 2

01-01-2022 Rahul Ltd. offers for public subscription of equity shares of Rs.10 each at a premium of 10%. The company pays an underwriting commission of 5% on the issue price. The equity shareholders expect a dividend of 15%.

a) Calculate the cost of equity capital.

b) Calculate the cost of equity capital, if the market price of the share is Rs.20.

Solution :

a) Cost of equity capital

Cost of equity capital Ke = $\frac{D1}{NP}$

D1 = Expected dividend per share = 15% of Rs.10 = 1.50

NP = Net Proceeds :

Issue Price = Face value + Premium 10% (10+1) = 11.00

Less: Underwriting commission 5% = 0.55

Net proceeds per share = 10.45

Cost of equity capital Ke = $\frac{1.50}{10.45}$ = 0.1435 or 14.35 %

b) If the market price is Rs.20

Cost of equity capital Ke = $\frac{D1}{MP}$

D1 = Expected dividend per share = 1.50

MP = Market price per share = Rs.20

Cost of equity capital Ke $= \frac{1.50}{20} =$ 0.075 or 7.5 %

Problem : 3

Ravi is a shareholder in India Polyester Ltd. The earnings of the company have varied considerably. Ravi feels that the long-run average dividend would be Rs.3 per share. He expects that the same pattern will continue in the future. Ravi expects a minimum rate of earnings of 15%.

At what price Ravi should buy the share of the company?

Solution :

Cost of equity capital Ke = $\frac{D1}{MP}$

Therefore :

MP = Market price per share = $\frac{D1}{Ke}$

D1 = Expected dividend = Rs.3

Ke = cost of equity capital = 15%

Market price = $\frac{3}{15\%}$ i.e., $\frac{3}{0.15}$ = Rs.20

It would be advisable to purchase the share at Rs.20

Problem 4

The shares of IF Ltd are currently traded at Rs.40 per share. The company's dividend record is as follows:

2010-11	Rs.2.20;	2011-12	Rs.2.42;	2012-13	Rs.2.66
2013-14	Rs.2.92;	2014-15	Rs.3.22		

IFC Ltd. Plans to issue new equity shares at Rs.40. The floatation costs are estimated at 5% of the issue price. You are required to determine

a) Growth rate in dividends

and b) Cost of equity capital assuming that growth in dividends will continue at the same rate.

c) Cost of new equity shares.

Solution :

a) Growth rate in dividends (g)

During the 4 years from 2010-2011 to 2014-2015, dividends had increased from Rs.2.20 to Rs.3.22 The compound factor = $\frac{3.22}{2.20}$ = 1.464

In the compound factor table, the compound factor 1.464 in the row of 4 years is found in the 10% column. Hence, the growth rate in dividends is 10%.

b) Cost of equity capital (Ke)

Ke = $\frac{D1}{MP}$ + g

D1 = Expected dividend: Current year dividend (Do)	3.22
Add: Growth at 10% of 3.22	0.32
D1	3.54

MP = Market price = Rs.40

Cost of equity capital Ke = $\frac{3.54}{40}$ + 10%

= 0.0885 + 0.10 = 0.1885 or 18.85%

Cost of equity capital = 18.85%

c) Cost of new equity shares (Ke)

Ke = $\frac{D1}{MP}$ + g

D1 = Expected dividend = Rs.3.54

NP = Net Proceeds = Issue price – Floatation costs (5%)

= Rs.40 – 2 = 38

Ke = $\frac{3.54}{38}$ + 10% = 0.0931 + 0.10 = 0.1931 or 19.31%

Cost of new equity shares = 19.31%

Problem 5

The market price of an equity share of G Ltd. is Rs.80. The dividend expected a year hence is Rs.1.60 per share. The shareholders anticipate a growth of 7% in dividends. Calculate the cost of equity capital.

Solution:

Cost of equity capital, Ke = $\frac{D1}{MP}$ + g

D1 = Expected dividend per share = Rs.1.60

MP = Market price per share = Rs.80

G = Growth rate in dividend = 7%

Cost of equity capital Ke = $\frac{1.60}{80}$ + 7% = 0.05 + 0.07 = 0.12 or 12%

Cost of equity capital = 12%

Problem : 6

The shares of a chemical company are quoted at Rs.42 per share. The firm had paid a dividend of Rs.4 per share last year. The expected growth in dividends is 5% per annum.

i) Determine the cost of equity capital of the company.

ii) Determine the market price of the equity share, if the anticipated growth rate of the firm

a) rises to 8% and b) falls to 3%

Solution :

i) Cost of equity capital (Ke)

Ke = $\frac{D1}{MP}$ + g

D1 = Expected dividend: Last year's dividend	4.00
Add: Growth at 5%	0.20
D1	4.20

MP = Market Price = Rs.42 g= Growth rate = 5%

Cost of equity capital Ke = $\frac{4.20}{42}$ + 5% = 10 + 0.05 = 0.15 or 15%

ii) (a) Market price, if the growth rate is 8%

Cost of equity capital Ke = $\frac{D1}{MP}$ + g

D1 = Expected dividend: Last year's dividend	4.00
Add: Growth at 8%	0.32
D1	4.32

Ke = $\frac{D1}{MP}$ + 8% i.e., 15% = $\frac{4.32}{0.07}$ = Rs.61.71

(b) Market Price, if growth rate falls to 3%

Cost of equity capital Ke = $\frac{D1}{MP}$ + g

D1 = Expected dividend: Last year's dividend	4.00
Add: Growth at 8%	0.12
D1	4.12

i.e., 15% = $\frac{4.12}{MP}$ + 3%

15 % - 3 % = $\frac{4.32}{MP}$

12 % = $\frac{4.32}{MP}$

MP = Market Price = $\frac{4.12}{12\%}$ = $\frac{4.12}{0.12}$ = Rs.34.33

The market price is Rs.34.33 when the growth rate falls to 3%

Problem : 7

Reliance company's share is quoted in the market at Rs.40 and the expected dividend for the next year is Rs.2 per share. Thereafter, the investors expect a growth rate of 5% p.a.

a) Calculate the cost of equity capital.

b) Calculate the market price per share if the expected growth rate is 6% p.a.

c) Calculate the market price per share if the dividend of Rs.2 is maintained, the cost of equity is 9% and the expected growth in dividends is 6% p.a.

Solution:

a) Cost of equity capital (Ke)

Ke = $\frac{D1}{MP}$ + g

D1 = Expected dividend Rs.2 ; MP = Market Price = Rs.40

G = Growth rate = 5% , i.e., 0.25

Cost of equity capital Ke = $\frac{2}{40}$ + 5%

0.05 + 0.05 = 0.10 or 10%

b) Market Price (MP), if the growth rate is 6%

Ke = $\frac{D1}{MP}$ → 10% = $\frac{2}{MP}$ + 6%

Rearranging the equation,

10% - 6% = $\frac{2}{MP}$ i.e., 4% = $\frac{2}{MP}$

MP x 4% = 2 ., MP = $\frac{2}{4\%}$ = $\frac{2}{0.04}$ = Rs.50

Alternatively, Ke = $\frac{D1}{MP}$ + g

Ke – g = $\frac{D1}{MP}$; i.e., (Ke-g) MP = D1

MP = $\frac{D1}{Ke-g}$ = $\frac{2}{10\%-6\%}$ = $\frac{2}{4\%}$ = $\frac{2}{0.04}$ = Rs.50

c) Market Price, (MP), if the growth rate is 6%

Ke = $\frac{D1}{MP}$ + g

9 % = $\frac{2}{MP}$ + 6%

9% - 6% = $\frac{2}{MP}$; i.e., 3% = $\frac{2}{MP}$

MP x 0.03 = 2

MP = $\frac{2}{3\%}$ = $\frac{2}{0.03}$ = Rs.66.67

LET'S SUM UP

Dear students, in this section we have seen cost of capital is the rate of return a company must earn to meet its financial obligations and provide adequate returns to its investors. The cost of specific sources of capital refers to the costs associated with different types of financing, such as debt, equity, and preferred stock.

Multi-Disciplinary Questions :

1. The cost of capital is ----------
   a) used as an evaluation tool
   b) based on the present cost obligations of the firm
   c) The cost of long–term investment
   d) The cost of maintaining the bureaucrats
2. The required rate of return that the debt investment must yield to protect shareholders
   a) Cost of equity
   b) Cost of debt
   c) Cost of retained earnings
   d) Cost of preference capital
3. The cost of equity share capital is more than the cost of debt because:
   a) Equity shares are not easily saleable
   b) Equity shares do not provide a fixed dividend rate
   c) Generally the face value of equity shares is less than the face value of debentures
   d) Equity shares have a higher risk than debts.
4. The current market price of a company's share is Rs.90 and the expected dividend per shareholder required rate of return will be
   a) 8% b) 5% c) 20% **d) 13%**
5. Which of the following is an implicit cost of increasing the proportion of debt of a company?
   a) The P.V ratio of the company would increase
   b) The rate of return of the company would decrease
   c) Tax -shield would not be available on new debts
   d) Equity shareholders would demand higher returns.

Module: 3

4. COMPUTATION OF WEIGHTED AVERAGE COST OF CAPITAL

- Weighted average cost of capital refers to the weighted average costs of different sources of finance. It is otherwise known as composite cost of capital, overall cost of capital, or average cost of capital. It is very important in financial decision-making.

Steps in the computation of weighted average cost of capital:

(i) Calculation of the cost of each specific source of funds. i.e. after the tax cost of each of the sources of finance is ascertained.

(ii) Assigning weights to specific costs.

(iii) The cost of each source is multiplied by the appropriate weight.

(iv) Adding the weighted cost of all the sources of funds to get an overall weighted average cost of capital.

WACC FORMULA

The weighted average cost of capital can be computed the following formula.

$$Kw = \frac{\sum XW}{\sum W}$$

- Kw = Weighted average cost of capital
- X = Cost of a specific source of finance
- W = Weights, proportion of specific source of finance.

Problem 1:

The following items have been taken from the balance sheet of Sakthi Sugars Ltd., as of 31st March 2020.

Paid up Capital:	**Rs.**
200000 shares of Rs.10 each	20,00,000
Reserves and Surplus	30,00,000
Loans :	
12% Non-Convertible Debentures	
10% Institutional loans	10,00,000
Other relevant information	40,00,000

The year ended 31st March	Dividend per share Rs.	EPS Rs.	Average Market Price
2017	2.00	4.00	24
2018	2.50	5.00	30
2019	3.00	6.00	40

Calculate the weighted average cost of capital. Use book values as weights and

Earnings/price ratio as the basis for the cost of equity. Assume a tax rate of 50%.

Solution :

Cost of equit capital Ke $\frac{EPS}{Market\ Price}$ = $\frac{6}{40}$ = 0.15 or 15%

Cost of Non-convertible Debentures ;

After-tax cost = Interest – Tax saving

= 12% - 50% of 12%

= 12% - 6% = 6%

Cost of institutional loans = 10% - 50% of 10%

= 10% - 5% = 5%

Computation of Weighted Average Cost of Capital

Sources of Funds	Amount Rs.	Proportion to Total (w)	After-tax cost % (x)	Weighted cost % (w) x (x)
Equity shares	2000000	.20	15	3.00
Reserves	3000000	.30	15	4.50
12% Non-Convertible Debentures	1000000	.10	6	0.60
10% Loans	4000000	.40	5	2.00

Problem 2:

The following items have been taken from the balance sheet of Sakthi Sugars Ltd., as

The capital structure and after-tax cost of different sources of funds are given below.

Sources of funds	Amount Rs.	Proportion to total	After-tax cost %
Equity share capital	720000	0.30	15
Retained earnings	600000	0.25	14
Preference share capital	480000	0.20	10
Debentures	600000	0.25	8

You are required to compute the weighted average cost of capital.

Solution:

Computation of Weighted Average cost of Capital (WACC)

Sources of Funds	Proportion to total	Cost % (x)	Weighted cost %

	(w)		(w) x (x)
Equity share capital	.30	15	4.5
Retained earnings	.25	14	3.5
Preference share capital	.20	10	2.0
Debentures	.25	8	2.0
Weighted average cost of capital (WACC)			12.0

Problem 3.

From the following capital structure of a company calculate the overall cost of capital using (a) Book value weights and (b) Market value weights

Source	Book value Rs.	Market value Rs.
Equity share capital (Rs 10 shares)	45000	90000
Retained earnings	15000	-
Preference share capital	10000	10000
Debentures	30000	30000

The after-tax cost of different sources of finance is as follows :

Equity share capital: 14%

Retained Earnings: 13%

Preference Share Capital: 10%

Debentures: 5%

Solution :

a) Computation of Weighted Average Cost of Capital

(Book value weights)

Source of funds (1)	Amount (2) Rs.	After-tax cost (3)	Total after-tax Rs. Cost (4) = (2) x (3)
Equity share capital	45000	14%	6300
Retained Earnings	15000	13%	1950
Preference share capital	10000	10%	1000
Debentures	30000	5%	1500
	100000		10750

Weighted Average cost of capital = $\frac{10750}{100000}$ x 100 = 10.75%

b) Computation of Weighted Average Cost of Capital

(Market value weights)

Source of funds (1)	Amount (2) Rs.	After-tax cost (3)	Total after-tax Rs. Cost (4) = (2) x (3)
Equity share capital	90000	14%	12600
Preference share capital	10000	10%	1000
Debentures	30000	5%	1500
	130000		15100

Weighted average cost of capital = $\frac{15100}{130000}$ x 100 = 11.61%

Problem 4.

A firm has the following capital structure after-tax costs for the different sources of funds used.

Source of funds	Amount Rs	Proportion %	After-tax cost %
Debt	1500000	25	5
Preference shares	1200000	20	10
Equity shares	1800000	30	12
Retained earnings	1500000	25	11
	6000000	100	

You are required to compute the weighted average cost of capital.

Solution :

Computation of Weighted Average Cost of Capital

Source of funds (1)	Amount (2) Rs	After-tax cost (3)	Total after-tax Rs. Cost (4) = (2) x (3)
Debt	1500000	5 %	75000
Preference shares	1200000	10 %	120000
Equity shares	1800000	12 %	216000
Retained earnings	1500000	11 %	165000
	6000000		576000

Weighted average cost of capital = $\frac{576000}{6000000}$ x 100 = 9.6%

LET'S SUM UP

Dear learners a financial metric known as the Weighted Average Cost of Capital (WACC) takes into account the relative weights of each component of the capital structure when calculating a company's cost of capital. It shows the average rate of return that all investors, including equity and debt holders, we looking for in this section**.** moreover, The discount rate for cash flow models, a company's financial health, and investment opportunities are all assessed using WACC. It is the bare minimum that a business must achieve on its existing asset base to satisfy its creditors or investors.

Multi-Disciplinary Questions :

1. In weighted average cost of capital, rising in interest rate leads to –

(A) Increase in cost of debt (B) Increase the capital structure

(C) Decrease in cost of debt (D) Decrease the capital structure

2. In weighted average cost of capital, capital components are funds that are usually offered by:

(A) Stock market (**B) Investors**

(C) Capitalist (D) Exchange index

3. While calculating WACC on a market value basis which of the following is not considered –

(A) After-tax cost of debt (B) Reserve and surplus

(C) Weight of each fund in capital structure (D) Cost of term loan

4. In weighted average cost of capital, a company can affect its capital cost through____

1. Policy of capital structure 2. Policy of dividends 3. Policy of investment,

(A) 1 only (B) 2 & 3 (C) 1 & 3 (D) All 1, 2 & 3

5. The weighted average of possible returns, with the weights being the probabilities of occurrence is referred to as _____.

(A) A probability distribution. (B) The expected return.

(C) .The standard deviation. (D) Coefficient of variation.

Module: 4

5. EBIT AND EPS ANALYSIS

5.1. Earnings Before Interest and Taxes (EBIT) – Earnings Before Interest And Taxes measure a firm's Net income before income tax and interest expenses are subtracted. EBIT is used to analyze the performance of a company's basic operations and operating income and its efficiency.

5.2. Earnings Per Share (EPS)

Earnings per share is used for evaluating the profitability of a company. It can simply be understood as the value of earnings per outstanding share of a company's common stock.

5.3 Types of Earnings Per Share

There are several variations of EPS, and each of them tends to signify a different aspect of this financial parameter.

Generally, EPS is divided into 3 broad categories,

1. Trailing EPS: It is entirely based on the previous year's figures.
2. Current EPS: Mostly based on the current projections and available figures.
3. Forward EPS: Depends on anticipated future projections and estimated figures.

To begin with, there are 5 types of earnings per share–

EPS Variations	Calculations
Reported EPS or GAAP EPS	Calculated as per Generally Accepted Accounting Principles.
Ongoing EPS or Pro Forma EPS	Does not include a subject's unusual one-time income in the net income.
Retained EPS	The summary of net earnings and current retained earnings is subtracted from the dividend paid. The outcome is further divided by the total number of outstanding shares.
Cash EPS	Total operating cash is divided by outstanding diluted shares.
Book Value EPS	Take the current balance sheet into account to compute the EPS.

5.4 EBIT-EPS Analysis

EBIT-EPS Analysis gives a systematic basis for comparison among various financial plans and display ways to maximize EPS. Here EBIT-EPS analysis may be defined as 'a tool of financial planning that evaluates various alternatives of financial a project under varying levels of EBIT and suggests the best alternative having highest EPS and determines the most profitable level of EBIT'. EBIT- EPS analysis is used for choosing the combination of the various sources. It helps select the alternative that yields the highest EPS.

5.5 Advantages of EBIT AND EPS

1. Financial planning
2. Comparative analysis
3. Performance evaluation
4. Determining optimum mix

5.6 Disadvantages of EBIT AND EPS

1) Leverage increases the level of risk, but this technique ignore the risk factor. No consideration for risk.
2) It gives a contradictory result where under different alternative financial plans new equity shares are not taken into consideration.
3) This analysis cannot determine the state of over- capitalization of a firm.

Problem 1 :

A firm has sales of Rs.7500000 variable cost of Rs.4200000 and fixed cost of Rs.600000. It has a debt of Rs.4500000 at 9% and equity of Rs.5500000. Calculate operating, financial and combined leverage of the firm. Also calculate the new EBIT, if the sales drop to Rs.5000000.

Solution : Calculation of EBIT and EBT

	Rs.
Sales	7500000
LESS : Variable cost	4200000
Contribution	3300000
LESS : fixed costs	600000
EBIT	2700000
LESS : interest	405000
EBT	2295000

i) Operating Leverage :

$$\frac{Contribution}{Operating\ Profit} \text{ i.e., } \frac{C}{EBIT}$$

$$= \frac{3300000}{2700000} = 1.2222$$

ii) Financial Leverage :

$$\frac{Operating\ Profit}{PBT} \text{ i.e., } \frac{EBIT}{EBT}$$

$$= \frac{2700000}{2295000} = 1.1764$$

iii) Combined Leverage :

Operating Leverage x Financial Leverage

= 1.2222 x 1.1764 = 1.4377

iv) Computation of new EBIT when sales drop to Rs.5000000

	Rs.
Sales	5000000
Less : Variable Cost $\frac{4200000}{7500000}$ X 5000000	2800000
Contribution	2200000
Less : Fixed Cost	600000
New EBIT	1600000

Ashok ltd has the following capital structure on October 11, 2023 :

Particulars	**₹**
Equity Share Capital (2,00,000 shares of ₹ 10 each)	20,00,000
Reserve and Surplus	20,00,000
12% Preference Shares	10,00,000
9% Debentures	30,00,000

The market price of equity shares is ₹ 30. It is expected that the Company will pay nextyear a dividend of ₹ 3 per share, which will grow at 7% forever. Assume a 40% income tax rate. You are required to compute WACC using market value weight.

LET'S SUM UP

Dear students, We learn financial metrics like EBIT (earnings before interest and taxes) and EPS (earnings per share) are used to evaluate a business's profitability and financial performance. Each is summarized as follows: Earnings Before Interest and Taxes, or EBIT, EBIT is a measure of a company's profitability that is calculated from earnings before interest and taxes are deducted. It is also referred to as operating income or operating profit.

Multi-Choice Questions :

1. What does EBIT stand for?

(a) Earnings Before Interest and Taxation

(b) Earnings Before Income and Taxes

(c) Earnings Before Interest and Taxes

(d) Earnings Before Income and Taxation

2. Which financial statement is EBIT commonly found on?

(a) Income Statement (b) Balance Sheet

(c) Cash Flow Statement (d) Statement of Retained Earnings

3. A company with an EBIT of $800,000 and a net income of $400,000 has interest expenses of $50,000. What is its tax rate?

(a) 50% (b) **30%** (c) 37.5% (d) 10%

4. Debt capacity of a business needs _____.

(a) Restriction. (b) **Consideration**.

(c). Leverage. (d) Security

5. Financial leverage refers to the rate of change in earnings per share for a given change in earnings_____.

(a) Before tax. (b) Before interest.

(c) **Before interest and tax** (d) After interest and tax.

Module: 5

6. LEVERAGE

Leverage is the process of increasing the potential return on an investment by utilizing borrowed funds or other financial instruments. Operating leverage, financial leverage, and combined leverage are the three primary types of leverage in finance. The impact of various components on a company's earnings and profitability is measured by each type of leverage.

6.1 Definition

James Horne has defined leverage as "the employment of an asset or sources of funds for which the firm has to pay a fixed cost or fixed return. The fixed cost indicates fixed operating cost, and fixed return indicates financial cost it should remain constant irrespective of changes in the volume of output or sales.

Leverage Analysis

- This analysis is conducted to understand the level of risk associated with the financing decision
- It gives the magnitude of change in one variable due to change in another variable

$$\text{Leverage} = \frac{\%\ change\ in\ dependent\ variable}{\%\ change\ in\ Independent\ variable}$$

6.2 Types of Leverages

Leverages can be classified into the following three types.

(i) Operating leverage

(ii) Financial leverage

(iii) Composite leverage.

6.2.1 Operating Leverage

Operating leverage indicates any changes in the sales may relate to change in revenue. It may be defined as the tendency of operating profit to vary disproportionately with the sales. Businesses with a lower proportion of fixed costs have low operating leverage, which means that their operating income changes less

quickly than their sales do.

Factors involved in operating leverage

(i) The Quantum of Sales

(ii) The amount of fixed costs

(iii) The contribution margin.

Degree of operating leverage

The term degree of operating leverage refers to the percentage changes in the operating profits resulting from a percentage change in sales.

6.2.2 Financial leverage

Financial exploitation Financial leverage is the extent to which a company borrows money to pay for its assets. It shows how earnings per share (EPS) or net income are affected by changes in operating income (EBIT).

High Financial Leverage: A company has high financial leverage when its debt to equity ratio is high. While this may boost returns, it also raises the possibility of bankruptcy during downturns.

Low Financial Leverage: A company with little or no debt has low financial leverage, which means it is less sensitive to changes in operating income and relies more on equity financing.

Significance of financial leverage

Financial leverage is having the following significances.

(i) Planning and designing of capital structure.

(ii) Profit planning

Limitation of Financial leverage

The financial leverage suffers from the following limitations.

(i) Increase risk and rate of interest.

(ii) Double edged weapon

(iii) Benefited to companies - regular and stability of earnings.

(iv) Restriction from financial institutions.

Degree of financial leverage

The term degree of financial leverage means the percentage change in taxable profit as a result of percentage change in operating profit.

6.2.3 Composite leverage

Composite leverage is otherwise called as combined leverage. Get Actually operating leverage affects the income position of the company which is the result of production on the another aspect of financial leverage is the outcome of financial decision of the firm.

Alternative definition of financial leverage

According to Gilman financial leverage is the "ability of firm to use fixed financial charges to magnify the effects of changes in EBIT on the firms earning per share."

6.3 Computation of leverages

1. **Operating Leverage**

$$\frac{Contribution}{Operating\ Profit} \quad \text{or} \quad C/OP$$

Contribution = Sales – Variable Cost

Operating Profit = Contribution – Fixed Cost

The break-even point can be calculated by the following formula.

$$BEP = \frac{Fixed\ Cost}{\frac{P}{V} ratio}$$

$$\frac{P}{V} \text{ ratio} = \frac{Contribution}{Sales} \text{ X } 100$$

$$\text{(Degree of Operating Leverage :)} = \frac{Percentage\ change\ in\ the\ operating\ profit}{Percentage\ change\ in\ sales}$$

2. **Financial Leverage**

$$\text{Financial Leverage} = \frac{OP}{PBT}$$

OP = Operating profit or Earning before Interest and tax (EBIT)

PBT = Profit before tax but after interest

$$\text{Degree of financial leverage} = \frac{Percentage\ change\ in\ Taxable\ Income}{Percentage\ change\ in\ Operating\ Income}$$

Or

$$\text{(DFL)} = \frac{Percentage\ change\ in\ EPS}{Percentage\ change\ in\ EBIT}$$

3. Composite Leverage

Composite Leverage = Operating Leverage x Financial Leverage

$$= \frac{C}{OP} \text{ X } \frac{OP}{PBT} = \frac{C}{PBT}$$

C = Contribution (Sales – VC)

OP = Operating Profit

PBT = Profit before tax but after interest.

4. Working Capital Leverage

Working capital means excess current assests over current liabilities. Actually the working capital leverage determines the sensitivity level of return on investment (ROI) of changes in the level of current assets.

Working Capital Leverage = $\frac{\%\ Change\ in\ ROI}{\%\ Change\ in\ CA}$

Note : Suppose the earnings are not affected by the change in current assets then working capital leverage can be calculated as follows.

WCL = $\frac{CA}{TA \pm DCA}$

CA = Current Assets

TA = Total Assets

DCA = Change in the level of current assets.

PROBLEM 1 :

Minmix Ltd has the following capital structure.

	Rs.
10000 Equity shares of Rs.10 each	100000
2000 10% pref. shares of Rs. 100 each	200000
2000 10% Debentures of Rs.100 each	200000

Calculate the EPS for each of the following levels EBIT:
Rs.100000 , Rs.60000 , Rs. 140000. The company is in 50% tax bracket.
Calculate the (a) Financial leverage taking EBIT level under (i) as base and (b) Degree of financial leverage.

Solution : Statement showing Computation of EPS

	I	II	III
EPIT	100000	60000	140000
LESS : Interest on Debentures (200000 x 10/100)	20000	20000	20000

Profit before tax	80000	40000	120000
LESS : Income tax 50%	40000	20000	60000
Profit after tax (PAT)	40000	20000	60000
LESS : Preference dividend	20000	20000	20000
Amount available for equity share holders	20000	-	40000
No of equity shares	10000	-	10000

Earning per Share

$$= \frac{Amount\ available\ for\ equity\ share\ holders}{No\ of\ equity\ share}$$

I = $\frac{20000}{10000}$ = Rs.2/-

II = $\frac{40000}{10000}$ = Rs.4/-

A) Financial Leverage :

$$= \frac{OP}{PBT} = \frac{100000}{40000} = \text{Rs.2.5} - 60000 = \frac{140000}{80000} = \text{Rs.1.75/-}$$

Computation of Financial Leverage

Situation I

Operating Profit		100000
LESS : interest	20000	
Per-dividend	40000	60000
(Gross up)	PBT	40000

Situation II

Operating Profit		60000
LESS : interest	20000	
Pre-dividend	40000	60000
	PBT	--

Situation III

Operating Profit		140000
LESS : interest	20000	
Pre-dividend	40000	60000
	PBT	80000

B) Degree of Financial Leverage :

$$= \frac{\%\ change\ in\ EPS}{\%\ change\ in\ EBIT}$$

i) Degree of Financial Leverage in between (1) and (2)

EPS [2→0] $\frac{100}{40}$ = 2.5

PBT [100000 → 60000] i.e., $\frac{100}{100000}$ X 40000 = 40%

ii) Degree of Financial Leverage between (1) and (3)

EPS = [2→4] 100

EBIT [→100000 →140000] 40

i.e., $\frac{100}{100000}$ X 40000 = 40 = 2.5

PROBLEM 2:

Maha brothers has sake of Rs.1000000 variable costs Rs.700000 and fixed costs Rs.200000 and debt of Rs.500000 at 10% rate of interest. Calculate operating financial and combined leverages? If the firm wants to double its earnings before interest and tax (EBIT) how much a rise in sales would be needed on a percentage basis?

Solution : **PROFITABILITY STATEMENT**

	Rs.
Sales	1000000
LESS : Variable cost	700000
Contribution	300000
LESS : fixed costs	200000
Earnings before interest and taxes	100000
LESS : interest	50000
PBT	50000

a) Operating Leverage = $\frac{Contribution}{EBIT}$ = $\frac{300000}{100000}$ = 3/-

b) Financial Leverage = $\frac{EBIT}{PBT}$ = $\frac{100000}{50000}$ = 2/-

c) Combined Leverage = Operating Leverage x Financial Leverage

= 3 x 2 = 6 times

d) The firm wants to double its EBIT to find out the increment of sales

Increment Sales = Rs.3,33,333.

Workings :

Percentage of variable cost to sales = $\frac{Variable\ Cost}{Sales}$ X 100

= $\frac{700000}{1000000}$ X 100 = 70 %

Find the Contribution

Sales – Variable Cost = Contribution

100% - 70% = 30%
Total contribution = EBIT + C
i.e., 100000 + 300000 = 400000/-
FIND THE TOTAL SALES VALUE WITH HELP OF CONTRIBUTION
i.e., $\frac{100}{30}$ X 400000 = Rs.1333333/-
Increase in sales = 1333333 – 1000000 = 333333/-
Percentage of increase in sales = $\frac{333333}{1000000}$ X 100 = 33.33

LET'S SUM UP

Dear students, In this section we have known about this topic Operating Leverage is Relates to fixed operating costs and their effect on EBIT. Financial Leverage is Involves the use of debt financing and its impact on net income and EPS. Combined Leverage is Reflects the total effect of both operating and financial leverage on net income and EPS. We Understanding these types of leverage is crucial for assessing a company's risk and return profile, making them essential tools for financial analysis and decision-making.

Multi-Choice Questions :

1. The relationship between the operating income and earnings per share is known as

(a) Financial leverage (b) Operating leverage
(c) Composite leverage (d) Working capital leverage

2. Which leverage measures the relationship between the sales, revenue and the taxable income?

(a) Financial leverage **(b) Composite leverage**
(c) Operating leverage (d) Working capital leverage

3. Which leverage measure the sensitivity of return on investment of change in the level of current assets?

(a) Operating leverage (b) Composite leverage
(c) Financial leverage **(d) Working capital leverage**

4. The relationship between the sales, revenue and operating income is known as

(a) Financial leverage (b) Composite leverage

(c) Working capital leverage **(d) Operating leverage**

5. In financial analysis, Leverage represents the influence of one__over some other related

(A) Non-financial variable; financial variable

(B) Financial variable; financial variable

(C) Financial variable; non-financial variable

(D) Variable relating to revenue; financial variable

ANSWERS TO CHECK YOUR PROGRESS	
Module 1	1. (C) Specific cost of capital 2. (D) Dividend Yield Method 3. (B) Common Stockholders 4. (A) Component cost 5. (A) Dividend policy
Module 2	1. (C) The cost of long–term investment 2. (B) Cost of debt 3. (D) Equity shares have a higher risk than debts 4. (D) 13% 5. (D) Equity shareholders would demand higher returns.
Module 3	1. (A) Increase in cost of debt 2. (B) Investors 3. (B) Reserve and surplus 4. (D) All 1, 2 & 3 5. (A) The expected return
Module 4	1. (D) Earnings Before Income and Taxation 2. (A) Income Statement 3. (A) 30% 4. (D) Consideration 5. (B) Before interest and tax

Module 5	1. (A) Financial leverage 2. (B) Composite leverage 3. (D) Working capital leverage 4. (D) Operating leverage 5. (B) Financial variable; financial variable

Glossary :	
Cost of capital	This is the minimum return that a company must earn on its investments to maintain the market value of its stock.
Explicit cost	This is the discount that corresponds to the current value of the company. cash flow and the present value of its increase. Future cost: capital cost that is expected to raise funds to finance a capital budget or investment proposal.
The term of Leverage	As we have seen from the above discussion, a company can obtain the necessary financing either from equity\ or debt or from both sources. By building its capital structure, a company can use fixed-cost\portable securities to maximize shareholder wealth. Leverage is defined as the operation of leverage and the mathematical advantage it provides. In other words, boosting allows you to do things that wouldn't be possible otherwise. The concept also applies in business life. From a financial management perspective, the term financial leverage is often used to describe a company's ability to use fixed-cost assets or sources of financing to increase returns to its owners.
Financial leverage:	Financial leverage (FL) is the ability of a company to use fixed financial expenses to increase the profit from the impact of changes. in operations on the company's earnings per share.
Operating leverage:	Operating leverage can be defined as the ability of a company to use operating expenses to increase the effect of changes in sales on its profit before interest and tax.

EBIT AND EPS ANALYSIS	Analyzing the effect of leverage on shareholder returns based on different financial models or different leverage assumptions is called EBIT-EPS analysis. Companies have different options to finance their investment activities by combining different sources. As a level of operating profit, the combination of different funding sources will produce a profit per share, so different levels of funding models will be different

UNIT ACTIVITIES :

(III) Short Answers :

1. What is the cost of capital?
2. Define the cost of capital.
3. Cost of capital computation based on certain assumptions. Discuss.
4. Explain the classification of cost.
5. Mention the importance of the cost of capital.
6. Explain the computation of specific sources of cost of capital.
7. Explain various approaches for the calculation of the cost of equity.
8. Construct the cost of reserves and preferred stock sources.
9. Predict the difference between operating and financial leverages
10. List the limitations of financial leverage.
11. List the significance and of operating leverage.
12. List the limitations of operating leverage.
13. Discuss in detail note on cost of specific sources of capital.
14. Explain weighted average cost of capital.

(IV) Essay Type Answers :

1. Explain weighted average cost of capital
2. Predict the difference between operating and financial leverages
3. Discuss in detail note on cost of specific sources of capital
4. Maha company issues 120000 10% debentures of Rs. 10 each at a premium of 10%. The costs of floatation are 4%. The rate of tax applicable to the company is 55%. Complete the cost of debt capital.
5. Lakshmi Ltd., issues 8000 8% debentures for Rs. 100 each at a discount of 5%.

The commission payable to underwriters and brokers is Rs. 40000. The debentures are redeemable after 5 years. Compute the after-tax cost of debt assuming a tax rate of 60%.

6. Bharathi Ltd., issues 4000 12% preference shares of Rs. 100 each at a discount of 5%. The costs of raising capital are Rs. 8000. Compute the cost of preference capital.

7. A company issues 10,000 equity shares of Rs. 100 each at a premium of 10%. The company has been paying 25% dividend to equity shareholders for the past five years and expects to maintain the same in the future also. Compute the cost of equity capital. Will it make any difference if the market price of equity shares is Rs. 175?

Case Study

Exercise 1

A ram company issues ₹ 10,00,000 12% Debenture of ₹ 100 each. The debentures are redeemable after the expiry of a fixed period of 7 years. The company is in a 35% tax bracket.

Required:

(i) Calculate the cost of debt after tax, if the debenture is issued at (a) Par (b) 10% discount (c) 10% premium

(ii) If the brokerage is paid at 2%, what will be the cost of debenture, if the issue is atpar?

Exercise 2

(a) A Ltd. issues Rs. 10,00,000, 8% debentures at par. The tax rate applicable to the company is 50%. Compute the cost of debt capital.

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

(c) A Ltd. issues Rs. 1,00,000, 8% debentures at a discount of 5%. The tax rate is 60%, which computes the cost of debt capital.

(d) B Ltd. issues Rs. 10,00,000, 9% debentures at a premium of 10%. The costs of floatation are 2%. The tax rate applicable is 50%. Compute the cost of debt capital. In all cases, we have computed the after-tax cost of debt as the firm saves on account of tax by using debt as a

source of finance.

Exercise 3 XYZ Ltd. issues 20,000, 8% preference shares of Rs. 100 each. The cost of issue is Rs. 2 per share. Calculate the cost of preference share capital if these shares are issued (a) at par, (b) at a premium of 10%, and (c) at a debentures of 6%.

Exercise 4

A firm has the following capital structure and after-tax costs for the different sources of funds used:

Source of Funds	Amount (Rs)	proportion	After-tax cost
Debt	12000	20	4
Preference Shares	15000	25	8
Equity Shares	18000	30	12
Retained Earnings	15000	25	11
Total	60000	100	

Exercise 5

ABC Ltd. has the following capital structure.

Rs. Equity (expected dividend 12%) 10,00,000

10% preference 5,00,000

8% loan 15,00,000

You are required to calculate the weighted average cost of capital, assuming 50% as the rate of income-tax, before and after tax

Exercise 6

Ashok ltd has the following capital structure on October 11, 2023 :

Particulars	₹
Equity Share Capital (2,00,000 shares of ₹ 10 each)	20,00,000
Reserve and Surplus	20,00,000
12% Preference Shares	10,00,000
9% Debentures	30,00,000

The market price of equity shares is ₹ 30. It is expected that the Company will pay nextyear a dividend of ₹ 3 per share, which will grow at 7% forever. Assume a 40% income tax rate. You are required to compute WACC using market value weight.

References :

1.Dr.V.R.PALANIVELU - Financial Management,

2. Dr.V.R.PALANIVELU - Accounting for Managers

UNIT - 4

CAPITAL STRUCTURE

CAPITAL STRUCTURE

Capital Structure - Factors influencing capital structure optimal capital structure - capital structure theories - Net Income Approach - Net Operating Income (NOI) Approach – Modigliani Miller (MM) Approach - Traditional Approach - Practical Problems. Dividend and Dividend policy: Meaning, classification – sources available for dividends -Dividend policy general, determinants of dividend policy

UNIT MODULE STRUCTURING

- Capital Structure
- Capital Structure Theories
- Practical Problems
- Dividend and Dividend policy
- Dividend Policy Problems

UNIT OBJECTIVES

- To educate on the concept of capital Structure
- To create understanding on the concept of dividend
- To develop the idea for the Capital Structure Theories.
- To enhance the knowledge on problems of dividend policy and Capital Structure.

SELF-LEARNING MATERIAL DEVELOPMENT

Table of Contents for the Unit

MODULE 1

CAPITAL STRUCTURE

1.1 MEANING OF CAPITAL STRUCTURE

Capital structure refers to the mix of its capitalization. A company can mobilize its required capital by issuing different type of securities i,e,

- Equity shares
- Preference shares
- Bonds
- Debentures

In other words, capital structure is the combination of various kinds of securities issued by the company. It is the permanent financing of the company represented by shareholders funds and long-term loans.

Capital Structure is a part of the financial structure. Basic patterns of capital structure are given below,

- Issuing only Equity shares.
- Issuing Equity shares and Preference shares.
- Issuing Equity and Debentures.
- Issuing Equity shares, Preference shares and Debentures.

1.2 DEFINITION OF CAPITAL STRUTURE

According to **Geresternberg,** "Capital structure of a company refers to the m up of its capitalization and it includes all long-term sources, viz, loans, reserves, shares and bond EF Brigham defines capital structure as "the percentage share of each type of capital used the firm-debt, preference share capital, equity share capital, and retained earnings"

According to **Weston and Brighan, "**Capital structure is the permanent financing of the firm, represented by

- Long-term debt
- Preferred stock

- Net worth

1.3 FACTORS INFLUENCING CAPITAL STRUCTURE

The following factors govern the capital structure of a company.

- Trading on Equity.
- Nature of enterprises.
- Legal restrictions.
- Purpose of financing.
- Period of finance.
- Market conditions.
- Size of the company.
- Need of Investors.
- Government Policy.
- Cost of capital and availability of funds.

1.3.1 Trading on Equity:

A company may mobilise capital either by issue of shares of by debentures. In any situation, the rate of return an total capital employed is more than the rate of interest on debentures or rate of dividend on preference shares. It is known as trading on equity. In a particular situation, a company can pay higher rate of dividend than the general rate of earnings on the total capital employed. It is the benefit of trading on equity.

1.3.2 Nature of enterprises:

Foremost determinant of capital structure of a company is the nature of the business enterprise. Businesses having more risks but varying income prefer equity shares. Firms, engaged in public utility services, may prefer issue of debentures and preference shares.

1.3.3 Legal Restrictions:

Each and every company has to comply with provisions of the law regarding the issue of different kinds of securities. So, the promoter of a company has to follow the legal provisions. Specially in India, banking companies are not allowed to issue

any type of securities other than equity shares

1.3.4 Purpose of Financing:

The purpose of financing for raising the fund must be taken into account at the time of formulating capital structure of the company If funds are required for direct productive purpose, the company can afford to issue debentures. But, the funds are required for non-productive purposes, the company should raise funds through issue of equity shares.

1.3.5 Period of Finance:

Generally, the period of finance also determines the capital structure of companies. Short term commitment of companies are met out through borrowings. Sometimes, if the funds are required for 8 to 10 years, it will be met by issue of debentures. If funds are required for more than 10 years, it can be met out by issue of equity shares.

1.3.6 Market Conditions:

Movement of the capital market also decides the capital structure of the company. During the periods of depression, the investors will look for their safety and they prefer to invest in debentures and not in equity shares. But, during the boom period any type of securities can be sold very easily in the market, hence equities also get the better market.

1.3.7 Size of the Company:

The small scale organisations fully depend upon the owner's fund to run their business. Such companies find it difficult to obtain long term debt. But, large scale organisations are generally considered to be less risky by the investors. So, they can issue different types of securities and mobilise resources from different sources.

1.3.8 Need of Investors:

Some of the investors prefer to invest in debentures because they provide safety of investment and stable income. Preference shares will be preferred by those who want a higher and stable income with sufficient safety of investment. Those, who want to bear higher risk, higher return and capital appreciation prefer equity shares only. So, capital structure of the company depends upon the financial status and psychological attitude of the investors

1.3.9 Government Policy:

Any of the monetary, fiscal, financial policies, which are time to time

announced by the union government, may straight away affect the capital structure decision of the company. For example, change in the lending policy of financial institutions may mean a complete change in the financial pattern. New provisions of the SEBI also affect the capital issue policies of various companies.

1.3.10 Cost of Capital and Availability of Funds:

The appropriate term of financing is, at times, the result of the study of comparative cost of various types of financing in relation to the level of risk involved and the availability of various alternative forms of financing. But, sometimes, debentures may be issued because of their cheapness and availability, the danger of the financial position and so on.

1.4 OPTIMAL CAPITAL STRUCTURE

Optimum capital structure means an ideal combination of borrowed and owned capital that may achieve the maximisation of market value per share and decrease the cost of capital when the real cost of each source of funds is the same. Optimum capital structure is also called as balanced capital structure.

The Characteristics of optimum or balanced capital structure are give below,

- Profitability & Solvency.
- Conservatism.
- Effective Control.
- Economy.
- Attraction to the Investors.
- Ease and Simplicity & Minimum Remuneration.

1.5 CAPITAL STRUCTURE PLANNING

The term capital structure means proportion of various sources of equity share capital, preference share capital, retained earnings, term loan and debentures in the total capital of the firm Estimation of total capital requirements for current and future needs is almost essential for a firm The ultimate aim of the capital structure planning is to maximization of profits and wealth of the shareholders. It ensures maximize the value of the firm and also minimize the cost of capital.

It assists the financial manager to determine the proper mix of debt and equity of the firm. Simply a capital structure planning helps to ensure effective utilization of funds and maximize the return to equity shareholders.

Let's Us Sum-Up:

Dear Learners, In this Module we learn about Meaning of Capital Structure, Definition of Capital Structure, Factors influencing Capital Structure, Optimal Capital Structure and capital structure planning. The detailed explanation was given to the topic of Factors influencing Capital Structure.

Multi-Disciplinary Questions:

1. Which of these is not a part of Capital Structure?

   (A) Equity Shares (B) Debentures

   (C) Short-term borrowings (D)Bonds

2. Capital Structure refers to which of the following options:

   (A) Current assets and current liabilities

   (B) Shareholders equity

   (C) Long term debt, preferred stock and common stock options

   (D) None of the above

3. The main aim of capital structure is to:

   (A) Maximise owner's return and minimise the cost of capital

   (B) Maximise owner's return and maximise the cost of capital

   (C) Minimise owner's return and minimise the cost of capital

   (D) Minimise owner's return and maximise the cost of capital

4.The process of financing the assets of a business is known as:

   (A) Asset Structure (B) Owners Structure

   (C) Financial Structure (D) Capital Structure

5.Capital Structure is an optimal mix of which one of the following options:

   (A) Sales and profits (B) Debt and equity

   (C) Current assets and fixed assets (D) None of the above

******* MODULE 1 COMPLETED *******

MODULE 2

CAPITAL STRUCTURE THEORIES

2.1 MEANING OF CAPITAL STRUCTURE THEORIES

As per as the concept of capital structure is concerned a number of eminent scholars have made their valuable contribution with regard to relationship between capital structure, cost of capital and value of the firm. The main contributors of the theories are David Durand, Ezra Solomon, Modigliani and miller etc., some important theories is discussed below,

- Net income approach
- Net operating income approach
- Modigliani and miller approach
- The Traditional approach

2.2 NET INCOME (NI) APPROACH

The net income approach has been suggested by Durand. Under this approach capital structure decision is relevant to the valuation of the firm. A firm can minimize the weighted average cost of capital and increase the market price of the equity shares by using the debt content in its capital structure.

Basic Assumptions of the Net Income Approach are,

- The cost of debt is less than the cost of equity
- There are no corporate taxes
- The use of debt content does not change the risk perception of the investors as a result the equity capitalization rate of the company and the debt capitalization rate of the com pany remains constant with changes in leverage

2.2.1 COMPUTATION OF NET INCOME (NI) APPROACH

Valuation of firms: (NI approach)

$V = S + B$ or $V = S + D$

Where,

V = Total market value of a firm

S = Market value of equity shares

B = Market value debt

D = Market value of debt

Market value of Equity (S) can be computed as follows:

S = (NI)/(Ke)

NI = Earnings Available to Equity shareholders

Ke = Equity capitalization Rate

Note: Under NI approach normally (Ke) given in the problem. If (k) required we have to find out with help of the following formula

K = EBIT/V

K = Overall cost of capital

EBIT = Earnings before Interest and tax

V = Total value of the firm.

Computation of Net income (NI)

(Amount available for equity shareholders)

Earnings before interest and Tax	XXX
Less: Interest	XXX
Profit before Tax (PBT)	XXX
Less: Tax	XXX
Profit after Tax(PAT)	XXX
Less: Preference dividend if any	
Amount available for equity	XXX
Shareholders	**XXX**

2.3 NET OPERATING INCOME (NOI) APPROACH

This approach is also suggested by Durand It is dramatically opposite to the net income approach. According to this approach any changes in the capital structure of a company does not affect the market value of the firm and the overall cost of capital remain constant irrespective of the mode of financing. The implication of the above statement is that the overall cost of capital remains the same whether the debt equity mix is 50:50 or 20:80 or 40 60 under this theory all the structures are optimum capital structures This theory presumes the following assumptions,

- The debt capitalization rate is a constant

- The market capitalizes the value of the firm as a whole and therefore the split between debt and equity is not important.
- Corporate taxes do not exist.
- The use of the debt fund having low cost increases the risk of equity shareholders, but it could result in increase the equity capitalization rate.

2.3.1 COMPUTATION OF NET OPERATING INCOME(NOI) APPROACH

Valuation of firms: (NOI approach)

$$S = V - B$$

Where,

S = Market value of equity shares

V = Total market value of a firm

B = Market value debt

$$V = EBIT / K$$

EBIT = Earnings before Interest and tax

K = Overall cost of capital

If we need the Ke i.e Equity capitalization rate the following formula will applicable.

$$Ke = \frac{EBIT}{V - B} \times 100$$

If K is not given in the problem we have to find K with the following formula will Following formula

$$K = Kd (B/V) = Ke (S/V)$$

K = Overall cost of capital

Kd = Cost of Debt

B = Total Debt

V = Total value of a firm

Ke = Equity capitalization rate

S = Market value of equity

2.4 MODIGLIANI AND MILLER(MM) APPROACH

Modigliani and Miller approach explain the relationship between capital structures, cost of capital and value of the firm under the following two respects.

- When the absence of corporate taxes
- When the corporate taxes are assumed to exist.

i) When the absence of corporate taxes:

This Approach is identical to NOI approach. When there are no corporate taxes. Modigliani and miller argue that whenever there are no taxes the cost of capital and value of the firm are not affected by capital structure or debt equity mix. In other words this theory describe at any particular situation the cost of capital is not affected by changes in the capital structure i.e. the debt- equity mix is irrelevant in the determination of the total value of a firm. Debt is cheaper than equity, but the use of debt increases the financial risk and the cost of equity. This increases in cost of equity, offsets the advantage of the low cost of debt. Net result of this process the overall cost of capital remains unchanged. According to MM approach the total value of a firm is determined by its operating income or EBIT.

ii) When the corporate taxes are assumed to exist:

MM argued that the capital structure would affect the cost of capital and the value of the firm even there are corporate taxes. In any firm having debt content in its capital structure, the cost of capital will decrease and the market value of the shares, increase. A levered firm should have therefore a greater market value as compared to an unlevered firm. The total value of the levered firm would exceed that of the unlevered firm by an amount equal to the levered firm and its debt is multiplied by the tax rate.

- Levered firm
- Unlevered firm

Levered Firm:

In any firm having debt content in its capital structure is known as levered firm.

Unlevered firm:

In any particular firm does not having debt content in its capital structure is known as unleveled firm.

Assumptions:

The MM hypothesis is based upon the following assumptions:

- There are no corporate taxes
- There is a perfect market
- 100% payment to shareholders i.e. all the earnings are distributed to the shareholders.
- There are no transaction costs
- All the firms can be grouped into homogenous risk classes. Investors expected earnings have identical risk characteristics.

2.4.1 COMPUTATION OF MODIGLIANI AND MILLER(MM) APPROACH

a) Value of Unlevered Firm:

$$Vu = \frac{\text{Pro}}{\text{Equity capitalization rate}}$$

$$Vu = \frac{(I - t)\ EBT}{Ke}$$

V = Value of inlevered firm

I = Interest

T = Tax rate

EBT = Earnings before Tax

b) Value of levered Firm:

Vl = Vu + Bt

Vl = Value of levered firm

Vu = Value of inlevered firm

Bt = Market value of debt

T = Tax rate

2.5 TRADITIONAL APPROACH

The traditional approach is otherwise called as Ezra Solomon's approach. In other words it is an intermediate approach between the net income approach and net operating income approach. According to this view the use of the debt up to a certain point is advantageous. It assists the firm to reduce the overall cost of capital and increase its value. After this point debt is increased, it leads to financial risk of shareholders. The net result of this impact the cost of equity increases but the benefit of debt is neutralized. [Simply traditional approach contains the features of NI approach and NOI approach. In other words, it contains certain principles of NI

approach and certain principles of NOI approach].

The use of debt up to a certain point is favourable. Beyond this point the use of debt will adversely affect the value of the firm. At that particular level of debt-equity mix, the capital structure will be optimum.

2.5.2 COMPUTATION OF TRADITIONAL APPROACH

Valuation of firm:

Actually Traditional approach possess certain features of NI approach and some features of NOI approach under this aspect there is no separate formula for computing total value of the firm.

Computation of earnings per share(EPS):

Earnings before interest and Tax (EBIT)	xxx
Less: Interest	xxx
Profit before Tax (PBT)	xxx
Less: Tax	xxx
Profit after Tax (PAT)	xxx
Less: Preference Dividend	xxx
Profit available for equity shareholders	xxx

Let's Us Sum-Up

Dear Learners, In this Module we learned the Capital Structure Therioes. The detailed explanation was given to the topic of Therories. From the therories we are giving the explantion about Net income approach, Net operating income Approach, Modigliani & Miller approach, and finally we discussed about Traditional approach.

Multi-Disciplinary Questions

1. The term " Capital Strcuture" refers to the relationship between,
   a. Debentures, Preference Share & Equity Share Capital.
   b. Current Assets and Current Liabilities.
   c. Sum of Non-Current assets.
   d. Sum of all outsiders' liabilities.
2. The NI Approach assumed:
   a. K_e is to be same and Constant.

b. There are no Taxes.

c. Ko falls as the degree of leverage is increased.

d. All of the Above

3. In case of Net Income Approach, the cost equity is,

a. Constant

b. Fixed

c. Increasing

d. Decreasing

4. NI and NOI approach has been suggested by

a. F.W.Taylor

b. David Durand

c. Marshall Edgeworth

d. Fisher

5. The Traditional Approach is also Known as

a. NI Approach

b. NOI Approach

c. MM Approach

d. Intermediate Approach

******* MODULE 2 COMPLETED *******

MODULE 3

PRACTICAL PROBLEMS FOR CAPITAL STRUCTURE

3.1 PROBLEMS

Problem:1

NCP Company Ltd. Has an all equity capital structure consisting of 20,000 equity shares of Rs. 100 each. The management plans to raise Rs. 30 lakhs to finance a programme expansion. Three alternative methods of financing are under consideration.

i) Issues of 30,000 New Shares of Rs.100 each.

ii) Issues of 30,000 8% debentures of Rs.100 each.

iii) Issues of 30,000 8% preference shares of Rs.100 each.

The company's expected earnings before interest and taxes (EBIT) are Rs.10 Lakhs. Determine the earnings per share in each alternative assuming a corporate tax rate of 50 percent. Which alternative is best and Why?

Solution:

EPS under Different Financial Plans

	Plan I Equity Financing Rs.	Plan II Debt Financing Rs.	Plan III Preference Share Rs.
i) Earnings before interest and Taxes (EBIT)	10,00,000	10,00,000	10,00,000
ii) Less: Interest on Debentures 8%	-	2,40,000	-
iii) Earnings before tax	10,00,000	8,60,000	10,00,000
iv) Less Tax at 50%	5,00,000	3,80,000	5,00,000
v) Earnings after Tax	5,00,000	4,80,000	5,00,000
vi) Less: Preference dividend 8% on 30,00,000	-	-	2,40,000
vii) Earnings available to Equity Shareholders	5,00,000	4,80,000	2,60,000
viii) No. of equity shares (v)	50,000	20,000	20,000
ix) Earnings per share Rs. (vii) / (viii)	10	24	13

a) No. of. Equity Shares in Plan I = Existing Shares + New Issue
= 20,000 + 30,000 = **50,000**

Comments:

The Earning per share is the highest plan II – (Debt Financing) Hence, it is advisable for the company to issue 30,000 to raise the additional finance.

Problem: 2

A Ltd. Company needs Rs. 6,00,000 for construction of a new plant. The following three financial plans are feasible.

i) The company may issue 60,000 equity shares of Rs. 10 each

ii) The company may issue 30,000 equity share of Rs. 10 each and 3,000 debentures of Rs. 100 each bearing 8% coupon rate of interest.

iii) The company may issue 30,000 equity shares of Rs.10 each and 3,000 Preference Share Rs. 100 each bearing 8% rate of dividend.

The profit before interest and taxes (PBIT) is expected to be Rs. 1,50,000. Corporate tax rate is 50%.

Calculate the earnings per share under the three plans. Which plan would you recommend and why?

Solution:

EPS under Different Plans

	Plan I Equity Rs.	Plan II Equity & Debt Rs.	Plan III Equity & Preference Share Rs.
Profit before Taxes and Interest	1,50,000	1,50,000	1,50,000
Less: Interest 8% on 3,00,000	-	24,000	-
Profit before tax	1,50,000	1,26,000	1,50,000
Less: Tax at 50%	75,000	63,000	75,000
Profit after Tax	75,000	63,000	75,000
Less: Preference dividend 8% on 3,00,000	-	-	24,000
Profit available to Equity Shareholders (i)	75,000	63,000	51,000
No. of equity shares (ii)	60,000	30,000	30,000
Earnings per share Rs. (i) / (ii)	1.25	2.10	1.70

Comments:

Earnings per share are the highest under plan 2. Hence plan 2 is recommended.

Problem: 3

The following is the capital structure of a company.

	Rs.
Equity Shares of Rs. 100 each.	20,00,000
Reserves and Surplus	8,00,000
9% Preference Shares	12,00,000
7% Debentures	10,00,000
Total Capital	50,00,000

The company earns 12% on its total capital. The company proposes to invest Rs.25 Lakhs in an expansion programme. The Following alternatives are available.

Plan A Issue of 20,000 equity shares at a premium of Rs.25
Plan B Issue of 10% Preference Share
Plan C Issue of 8% debentures

The price earnings ratios are estimated as follows: Plan A-13, Plan B-12, Plan C-10. Calculate the financial plans and make your recommendation, assuming a corporate tax rate of 50%.

Solution:

	Plan I Equity Rs.	Plan II Equity & Debt Rs.	Plan III Equity & Preference Share Rs.
Profit before Interest and Taxes: 12% on 75,00,000	9,00,000	9,00,000	9,00,000
Less: Interest on existing debentures at 7%	70,000	70,000	70,000
Profit before tax	8,30,000	8,30,000	8,30,000
Less: Interest on new debentures	-	-	2,00,000
Profit after Interest	8,30,000	8,30,000	6,30,000
Tax 50%	4,15,000	4,15,000	3,15,000
Profit after Tax	4,15,000	4,15,000	3,15,000
Less: Preference dividend on existing preference shares	1,08,000	1,08,000	1,08,000
	3,07,000	3,07,000	2,07,000
Less: Preference dividend on New preference shares	-	2,50,000	-
Profit available to Equity Shareholders (i)	3,07,000	57,000	2,07,000
No. of equity shares (ii)	40,000	20,000	20,000
Earnings per share Rs. (i) / (ii)	7.68	2.85	10.35
P.E Ratio(b)	13	12	10
Market Price (a) x (b)	99.84	34.2	103.5

Comments:

As market price is the maximum in Plan C, it is recommended.

Problem: 4

JJ Ltd. Has a share capital of Rs.1,00,000 dividend into shares of Rs.10 each. The

Management is considering the following alternatives for financing a capital expenditure of Rs.50,000

1. Issue of 10% Debentures.
2. Issue of 5,000, 12% Preference Shares of Rs.10 each.
3. Issue of 5,000 Shares of Rs.10 each. The Earnings before interest and taxes (EBIT) are Rs. 30,000 p.a. Calculate the effect of each of the alternatives on the earning per share assuming

(a) EBIT continues to be the same even after the capital expenditure.
(b) EBIT increase by Rs. 15,000.
(c) Tax Liability of 40%.

Solution:

(a) EPS under Different Alternatives (EBIT = 30,000)

	Debentures Rs.	Issue of	
		Preference Share Rs.	Equity Shares Rs.
EBIT	30,000	30,000	30,000
Less: Interest 10% on	5,000	-	-
Earnings before tax	25,000	30,000	30,000
Less: Tax @ 40%	10,000	12,000	12,000
Earnings after Tax	15,000	18,000	18,000
Less: Preference Dividend 12% on 50,000	-	6,000	-
Earnings available to equity shareholders(a)	15,000	12,000	18,000
No. of Equity Shares (b)	10,000	10,000	15,000(c)
Earnings per Share (a) / (b)	1.50	1.20	1.20

Note: (c) - Existing Shears + New Shares = 10,000 + 5,000 = 15,000

(b) EPS under Different Alternatives (EBIT = 45,000)

	Debentures Rs.	Issue of	
		Preference Share Rs.	Equity Shares Rs.
EBIT (30,000 + 15,000)	45,000	45,000	45,000
Less: Interest 10% on	5,000	-	-
Earnings before tax	40,000	45,000	45,000
Less: Tax @ 40%	16,000	18,000	18,000
Earnings after Tax	24,000	27,000	27,000
Less: Preference Dividend 12% on 50,000	-	6,000	-
Earnings available to equity shareholders (a)	24,000	21,000	27,000
No. of Equity Shares (b)	10,000	10,000	(c) 15,000
Earnings per Share (a) / (b)	2.40	2.10	1.80

Problem: 5

Honda Ltd. Has an equity capital 6,000 shares of Rs. 100 Each. The company plans to raise Rs. 4,00,000 for expansion and modernization. The following alternatives are under consideration.

(a) Issue of common stock.

(b) Issue of common stock for Rs. 2,00,000 and 10% debt for Rs. 2,00,000.

(c) Issue of 10% debt.

(d) Issue of 10% preference shares for Rs. 2,00,000 and 10% debt for Rs. 2,00,000.

The company's existing earnings before interest and Taxes are Rs.4,00,000. The rate of corporate tax is 50%. Determine the earnings per share in each plan.

Solution:

EPS under Different Plans

	Plan I Rs.	Plan II Rs.	Plan III Rs.	Plan IV Rs.
Earnings Before Interest and Taxes	4,00,000	4,00,000	4,00,000	4,00,000
Less: Interest	-	20,000	40,000	20,000
Earnings Before Tax	4,00,000	3,80,000	3,60,000	3,80,000
Less: Tax @50%	2,00,000	1,90,000	1,80,000	1,90,000
Earnings after Tax	2,00,000	1,90,000	1,80,000	1,90,000
Less: Preference Dividend	-	-	-	20,000
Earnings available to equity shareholders	2,00,000	1,90,000	1,80,000	1,70,000
No. of Equity Shares	10,000	8,000	6,000	6,000
Earnings per Share	20	23.75	30	28.33

Working Notes:

Plan I	New Issue	=	Rs. 4,00,000 / 100 = 4000
	No. of. Shares	=	Existing Shares + New Shares
		=	6,000 + 4,000 = 10,000
Plan II	Interest	=	10% on 2,00,000 = Rs. 20,000
	New Issue	=	Rs. 2,00,000 / 100 = 2000
	No. of. Shares	=	Existing Shares + New Shares
		=	6,000 + 2,000 = 8,000
Plan III	Interest	=	10% on 4,00,000 = Rs. 40,000
	No. of. Shares	=	Existing Shares = 6,000
Plan IV	Interest	=	10% on 2,00,000 = Rs. 20,000
	Preference Dividend	=	10% on 2,00,000 = Rs. 20,000

Problem: 6

A company capital structure consists of the following.

	Rs.
Equity Shares of Rs. 100 each.	20,00,000
Retained Earnings	10,00,000
9% Preference Shares	12,00,000
7% Debentures	8,00,000
Total Capital	50,00,000

The company earns 12% on its capital. The Income Tax rate is 50%

The company requires a sum of Rs.25 Lakhs to finance its expansion programme for which Following alternatives are available to it.

i) Issue of 20,000 equity shares at a premium of Rs.25

ii) Issue of 10% Preference Share

iii) Issue of 8% debentures

It is estimated that the P/E ratios in the case of equity, preference share and debenture financing would be 21,4,17 and 15.7 respectively.

Among the three financing alternatives which one would you recommend and why?

Solution :

Evaluation of Various Financing Alternatives

Particulars	**Alternative I (Equity shares)**	**Alternative II (10% per Shares)**	**Alternative III (8% Debenture)**
EBIT (12% on Rs.75,00,000)	9,00,000	9,00,000	9,00,000
Less: Interest on old Debentures @7%	56,000	56,000	56,000
	8,44,000	8,44,000	8,44,000
Less: Interest on old Debentures @8%	-	-	-
PBT (Profit Before Tax)	8,44,000	8,44,000	8,44,000
Less: Tax @ 50%	4,22,000	4,22,000	4,22,000
PAT (Profit after Tax)	4,22,000	4,22,000	4,22,000
Less: Preference Dividend on existing Shares @ 9%	1,08,000	1,08,000	1,08,000
Less: Preference Dividend on new Shares @ 10%	3,14,000 -	3,14,000 2,50,000	3,14,000 -

(a) Amount available to equity share holders	3,14,000	64,000	2,14,000
No. of Equity Shares (b)	40,000	20,000	20,000
Earnings per Share (a) / (b)	7.85 3,14,000 / 40,000	3.20 64,000 / 20,000	10.70 2,14,000 / 20,000
Amount available for equity shareholders / Number equity pricing ratio (d) (Given in the problem)	21.4	17.0	15.7
Market Price per share (c x d)	167.99	54.40	167.99

Comments:

In the Above cases market price per share in plan(i) and (iii) is same. And at the same time EPS is highest in III plan. Under this aspect III financial plan i.e. issue of 8% debentures should preferred.

3.2 NET INCOME APPROACH

Problem: 1

Company Q and company R are in the same risk class and identical except that Q uses debt while R uses equity only. The levered firm A has 10% debentures of Rs. 9,00,000. Both the firms earn 20% on their total assets of Rs. 15 Lakhs.

The corporate tax rate is 40% and equity capitalization rate is 15% for an all equity company.

(i) Compute the value of companies Q and R using Net Income Approach.

(ii) Compute the value of the companies Q and R using net operating income approach.

(iii) Calculate the overall cost of capital (Ko) for companies Q and R.

Solution:

Computation of Value of Companies

i) Net Income Approach

	Company Q (levered) Rs.	Company R (Un levered) Rs.
EBIT 20% on Rs. 15,00,000	3,00,000	3,00,000
Less: Interest on Debentures 10% on 9,00,000	90,000	-
Earnings Before Tax	2,10,000	3,00,000
Less: Tax 40%	84,000	1,20,000
Earnings available to shareholders	1,26,000	1,80,000
Equity capitalization rate (Ke)	15% (.15)	15% (.15)
	1,26,000 / 0.15	1,80,000 / 0.15
Market Value of Equity (s)	1,26,000 / 0.15 = 8,40,000	1,80,000 / 0.15 = 12,00,000
Add: Value of Debt (D)	= 9,00,000	-
Value of the company (S + D)	17,40,000	12,00,000

ii) Net Operating Income Approach

Value of Unlevered company R (When taxes are considered)

		Rs.
1. As there is no debt, EBT = EBIT	=	3,00,000
2. Less: tax at 40% on 3,00,000	=	1,20,000
3. Earnings available to shareholders	=	1,80,000

4. Equity capitalization rate = 15% or 1.5

V_u = Value of unlevered company = Market value of equity

$$\frac{EAT}{K_e} = \frac{1,80,000}{.15} = \text{Rs. } 12,00,000$$

Value of levered company A (when taxes are considered)

$$V_1 = V_u + (TXD)$$

= Value of Unlevered firm + (Tax rate X Debt)

= 12,00,000 + (40% x 9,00,000)

= 12,00,000 + 3,60,000 = 15,60,000

iii) Computation of overall cost of capital of company Q

Cost of debt = 10%

After tax Cost of debt = 10% - Tax saving 40%

= 10% - 4% = 6%

$$\text{Cost of equity } (K_e) = \frac{\text{Earnings available to equity shareholders}}{\text{Marketing value of equity}}$$

Earnings available to Equity Shareholders		Market Value of Equity	
	Rs.		Rs.
EBIT	3,00,000	Value of company Q	15,60,000
Less: Interest	90,000	Less: Value of Debt	9,00,000
	2,10,000		6,60,000
Less: Tax at 40%	84,000		
PAT	1,26,000		

$$\text{Cost of equity } (K_e) = \frac{1,26,000}{6,60,000} = 0.190\% \text{ or } 19.09\%$$

Overall Cost of Capital

	Rs.	Proportion to Total (x)	After Tax Cost % (y)	Weighted Cost (X x Y)
Equity	6,60,000	0.42	19.09	8.02
Debentures	9,00,000	0.58	6.00	3.48
	15,60,000	Overall Capital		11.50

Problem: 2

(i) Ram Brothers & Co expects a net income of Rs. 80,000. It has Rs. 2,00,000 and 8% Debentures. The equity capitalization rate of the company is 10%. Calculate the value of the firm and overall cost of capital according to the Net income approach. (Ignoring income tax)

(ii) If Debenture debt is increased to Rs. 3,00,000 what shall be the value of firm and the overall capitalization rate?

Solution:

(i) Calculate the value of the firm:

$$V = S + B$$

V = Value of the firm, S = Market value of equity

$$B = \frac{NI}{K_e} = \frac{64,000}{10/100}$$ i.e., 64,000 x 100 / 10 = 6,40,000

Note:

(i) Computation of NI (Net Income)

Net Income	=	80,000
Less: Interest on 8% Debentures of Rs. 2,00,000	=	16,000
Amount available for Equity shareholders	=	64,000

Ke: Equity capitalization rate = 10%

Value of the firm = Rs. 8,40,000 [6,40,000 + 2,00,000]

[Value of Debenture 6,40,000 + 2,00,000 = 8,40,000]

ii) Computation of overall capitalization Rate:

Overall Cost of Capital(K) = EBIT / V , EBIT = Earnings Before Interest and Tax

$$V = \text{Value of the firm} = \frac{80,000}{6,40,000} \times 100 = 12.50\%$$

iii) Computation of the value of the firm when debentures raise to Rs. 3,00,000

Net Income	=	80,000
Less: Interest on 8% Debentures of Rs. 3,00,000	=	24,000
Amount available for Equity shareholders	=	56,000

Equity capitalization rate 10%

Market value of Equity 56,000 x 100/10	= 5,60,000
Market value of Debentures	= 3,00,000
Value of the Firm	= 8,60,000

Overall Capitalization Rate = EBIT / V x 100 , i.e EBIT: 80,000 , V: 8,60,000

EBIT = Earnings Before Interest and Tax, V = Value of the firm

Therefore, Overall Capitalization Rate = 80,000/8,60,000 x 100 = **9.3%**

Problem: 3

Kavin Ltd. Expecting an annual EBIT of Rs.4,00,000. The company has Rs.9,00,000 or 10% debentures. The cost of equity capital or capitalization rate is 12.5% you are required to calculate the total value of the firm and also state overall cost of capital using NI approach.

Solution:

$$V = S + B$$

Where,

V = Value of the firm,

S = Market value of equity,

To compute S = Find the amount available for equity shareholders (NI)

$$AAES(NI)S = NI / K_e$$

K_e = Equity capitalization Rate 12.5%.

		Rs.
EBIT		4,00,000
Less: Interest		90,000
Earnings before Tax or AAES		3,10,000
S= NI / K_e		3,10,000 / 12.5%
	S :	24,80,000
	B :	9,00,000
Total value of the firm V = S + B :		33,80,000

K = Overall cost of capital,

(i.e.) To compute K = EBIT / V

= 4,00,000 / 33,80,000

= 0.1183

= 11.83%

Value of the firm- NOI Approach

$$V = EBIT / K$$

Where,

EBIT = Earnings Before Interest and Tax

K = Overall cost of capital,

S = V – B

S = Value of the Equity, V= Value of the firm, B= Value of the Debt

3.2 NET OPERATING INCOME (NOI) APPROACH

Problem: 1

(i) RGM Ltd expects a net operating income of Rs. 2,00,000. It has Rs. 10,00,000 and 6% Debentures. The overall capitalization rate is 10%. Calculate the value of the firm and capitalization rate according to the Net Operating income approach.

(ii) If Debenture debt is increased to Rs. 7,50,000 what will be effect on the value of firm and the equity capitalization rate?

Solution:

(a) Value of the firm : NOI Approach

S = V – B

Where,

S = Value of the Equity, V= Value of the firm, B= Value of the Debt

First Step

$$V = \frac{EBIT}{K_e} \times \frac{2,00,000}{10 / 100} = 2,00,000 \times \frac{100}{10} = \mathbf{20,00,000}$$

EBIT = Earnings Before Interest and Taxes 2,00,000

K_e = Equity capitalization Rate 10%

B = Market Value of the Debenture: Rs. 10,00,000

Second Step

S = V – B = 20,00,000 – 10,00,000 = 10,00,000

After getting the value of V & B we can easily find the value of S

K_e = Equity capitalization Rate,

K_e = EBIT / V – B (x100)

$$= \frac{2,00,000 - 60,000}{20,00,000 - 10,00,000} \times 100 = \frac{1,40,000}{10,00,000} \times 100 = \mathbf{14\%}$$

(b) If the debenture debt is increased to Rs. 7,50,000 the value of the firm remains unchanged @Rs.10,00,000. The equity capitalization rate will be as follows.

$$\text{Equity capitalization Rate } K_e = \frac{EBIT - I}{V - B} = \frac{2,00,000 - 45,00,000}{10,00,000 - 5,50,000} \times 100 = \mathbf{22\%}$$

Problem: 2

Shanthi Ltd. Has an EDIT of Rs.5,00,000. The cost of debts is 10% and the outstanding debt amount to Rs.10,00,000. Assuming the overall capitalization rate is 12%. Calculate the value of the firm and equity capitalization rate using Net Operating income approach.

Solution:

V = Value of the firm

V = EBIT / K

EBIT = Rs. 5,00,000

overall capitalization rate 12%

$$V = \frac{5,00,000}{12 / 100}$$

= 41,66,667

Less B = 10,00,000

S = 3,16,666

Ke = Equity Capitalization rate

$$Ke = \frac{EBIT - I}{V - B} \times 100 = \frac{5,00,000 - 1,00,000}{41,66,667 - 10,00,000} \times 100 = \mathbf{12.63\%}$$

MM Approach

Levered firm Vi

Unlevered firm Vu

$$\textbf{Value of Unlevered firm (Vu)} = \frac{\textbf{(1-T) EBT}}{\textbf{Ke}}$$

EBT = Profit / Amount available to equity shareholders (Earnings before Tax)

Ke = Equity capitalization Rate.

Value of Unlevered firm (Vi) = Vu + Bt

Where,

Vu = Value of unlevered firm

B = Market Value Debt

T = Tax rate

3.3 MODIGLIANI AND MILLER (MM) APPROACH

Problem: 1

Two firms H and P are identical except in the method of financing. Firm H has no debt while firm P has Rs. 5,00,000, 6% debentures in financing. Both the firms earning an EBT of Rs. 1,80,000 each. The equity capitalization rate is 10%. The corporate tax rate is 50%. Calculate the market value of two firms using MM Approach.

Solution:

Value of Unlevered firm (Vu) (H)

T= Tax rate 50%,

EBT = Rs.1,80,000,

Ke = 10%

$$\text{Value of Unlevered firm (Vu)} = \frac{(1-T)\ EBT}{Ke}$$

$$= \frac{.50 \times 1,80,000}{10 / 100}$$

= Rs. 9,00,000

Value of levered firm (P) Vi = Vu + Bt

= 9,00,000 = (5,00,000 x 50 / 100)

= Rs. 11,50,000

Problem: 2

Two firms R and S are identical except in the method of financing. Firm R has no debt while firm S has Rs. 2,00,000, 5% debentures in financing. Both the firms have a Net Operating Income (EBIT) of Rs. 50,000 and the equity capitalization rate is 12.5%. The corporate tax rate is 50%. Calculate the value of the firms using MM Approach.

Solution:

(a) Value of firm R which doesn't use any debt

$$Vu = \frac{\text{Profit available to equity shareholders}}{\text{Equity Capitalization rate}} = \frac{EAT}{Ke}$$

Profit Available to Equity Shareholders:

As there is no debt, EBT = EBIT	50,000
Less: Tax @ 50% on 50,000	25,000
Profit available to equity shareholders (EAT)	25,000

Equity capitalization rate, Ke = 12.5%

$$Vu = \frac{25,000}{12.\%} = \frac{25,000}{0125} = \textbf{Rs. 2,00,000}$$

(b) Value of firm S which use debt (Levered)

Vi = Value of unlevered firm + (Tax rate x Debt)
= 2,00,000 + (50% x 2,00,000)
= 2,00,000 + 1,00,000
= Rs. 3,00,000

Let's Us Sum-Up

Dear Learners, In this Module we learned the Practical Problems for Capital Structure. The problem of capital structure indicates about Net income approach, Net operating income Approach, Modigliani & Miller approach and also we are explained about common problems of capital structure.

Multi-Discipilinary Questions

1. Which of these is a theory of capital structure?
   (a) Net Income (b) Modigliani-Miller Theorem
   (c) Net Operating Income (d) All of the Above
2. The Modigliani-Miller theorem is disregarded by economists because
   (a) It is outdated (b) It is unrealistic and euphoric
   (c) It has been conclusively proven wrong (d) All of the above
3. _____ is concerned with the maximization of a firm's earnings after taxes
   (a) Shareholder wealth maximization. (b) Profit maximization.
   (c) Stakeholder maximization. (d) EPS maximization.
4. What does EBIT stand for?

(a) Earnings Before Interest and Taxation

(b) Earnings Before Income and Taxes

(c) Earnings Before Interest and Taxes

(d) Earnings Before Income and Taxation

5. Which financial statement is EBIT commonly found on?

(a) Income Statement (b) Balance Sheet

(c) Cash Flow Statement (d) Statement of Retained Earnings

******* MODULE 3 COMPLETED *******

MODULE 4

DIVIDEND AND DIVIDEND POLICY

4.1 MEANING OF DIVIDEND & DIVIDEND POLICY

The term dividend refers to that part of the earnings (Profits) of a company which is distributed among the shareholders on the basis of their shareholding It is the reward to the shareholders for their investments made in the company.

Generally, the shareholders would prefer to receive higher rate of dividend in order to achieve their capital appreciation. But the company would prefer retention of profit as a desirable decision because it provide funds for financing the expansion and growth of the firms

Most of the companies follow certain principles for the declaration of dividend. But dividend should be declared only out of divisible profit If the company incurred loss at any particular year should not distribute dividend in that year Dividend policy means it is the policy of the company with regard to quantum of profits to be distributed as dividend.

The basic concept of the dividend policy is that the company desires and take any future action regarding the payment of dividend with help of the company law board.

DEFINITION OF DIVIDEND & DIVIDEND POLICY

According to the Institute of Chartered Accountants of India Dividend is a "a distribution to shareholders out of profits or reserves available for this purpose". Generally, dividend may be paid as a fixed percentage but this percentage may be changed every year according to the level of profit earned by the company.

According to Weston and Brighan defines dividend policy as "Dividend policy determines the division of earnings between payment to shareholders and retained earnings".

4.2 CLASSIFICATION OF DIVIDEND

Payment of dividend can be classified into the following forms.

1. Cash dividend

Dividend is paid to the shareholders in the form of cash is called cash dividend. The usual practice followed by the company is to pay dividend in cash. It results in out flow of fund from the firm. Hence the firm should maintain adequate cash resources for payment of cash dividend.

2. Bond dividend

The company does not have sufficient cash reserves to pay the dividend, it may issue bonds as against the amount due to the shareholders by way of dividend is known as bond dividend Actually it is not popular in our country.

3. Property Dividend

Property dividend are those which can be paid by the company to its shareholders in the form of property instead of payment of dividend in cash However this type of dividend is not popular in India

4. Stock Dividend

Payment of stock dividend is popularly known as issue of bonus shares in India. Because in any particular year the company does not have an adequate cash reserves it must decide to pay dividend in the form of shares. Normally the company may issue its own shares to the existing shareholders in lieu of cash dividend or in addition to cash dividend

5. Scrip Dividend

Scrip dividend means when earnings justify a dividend is known as scrip dividend.

4.3 SOURCES AVAILABLE FOR DIVIDEND

Various sources available for dividend policies are summarized below,

1. Stable dividend policy
2. Regular dividend policy
3. Policy to pay irregular dividend
4. Policy of no immediate dividend

1. Stable dividend policy

The term stable dividend means when the company maintains more or less stable rate of dividend. It may be in the following three forms.

- Constant Dividend per share
- Constant pay-out ratio
- Stable rupee dividend plus extra dividend

2. Regular dividend policy

Regular dividend policy indicates that the payment of dividend at the usual rate is known as policy Regular dividend policy a concern follow a regular dividend policy automatically it creates confidence among the shareholders.

3. Policy to pay irregular dividend

It implies when the company follow this policy it could not pay the regular dividend Because the company have uncertainty of earnings or inadequate profit. As per this policy if company earns a higher amount of profit it could pay higher rate of dividend. If there is no profit in any particular year the company does not declare dividend to its shareholders.

4. Policy of no immediate dividend

A company may follow a policy of paying no dividends immediately even when it earns huge amount of profit. Because either its unfavourable working capital position or on account of requirements of funds for future expansion.

4.4 DIVIDEND POLICY GENERAL

The general dividend is a portion of a mutual insurance company's surplus returned to its eligible customers.

The factors that impact a company's dividend policy are,

- The profitability of a company.
- Availability of funds.
- Growth plans.
- Dividend history of the company.
- Dividend trends in the industry.

4.5 DETERMINANTS OF DIVIDEND POLICY

The payment of dividend actually involves some legal as well as financial consideration. The following are the important factors which determine the dividend policy of a firm.

1. Legal restrictions

Business organisation must be legally restricted from the declaration and payment of dividend According to provisions of the companies Act 1956 has put several restrictions regarding the payment of dividends. Some of these are as follows

- Dividends can be paid only out of current profits of the company or past years

accumulated profits

- Dividends could not be paid out of capital

2. General state of economy

Status of the general economic conditions of the country greatly affects the management decision to distribute its earnings as dividend. In case of uncertain economic condition, the company may like to retain certain huge amount of earnings to establish reserve fund in order to face future challenges. During the periods of the economic depression the company must maintain large sums of money in reserves in order to meet out liquidity position of the company. In case of prosperity also the company need huge funds because of large profitable investment opportunity. In the above situation the company can declare only lower rate of dividend to its shareholders.

3. Age of the company

The age of the company must decide the dividend policy of the Concern. If newly established company limits its payment of dividend and retain substantial part of earnings for financing as growth and development purpose. But in case of elder companies. Which have established sufficient reserves so they have to pay liberal dividends i.e Higher rate of dividends.

4. Nature of Industry

Nature of industry is one of the factors considerably affects the dividend policy of the company Certain industries have uniformly stable demand irrespective of the economic conditions. But some other industries earnings are uncertain. Such firms should retain highest portion of its earnings to meet out the dividend claims during the recession periods Industries with steady market can declare a higher rate of dividends while cyclical industries should follow a lower rate of dividend policy.

5. Government Policy

Time to time Government announces policies with regard to the business and capital market a directly affects the profit earning capacity of the firm. And also, it restricts the declaration of dividend beyond certain percentage in a particular industry. The companies should formulate the dividend policy accordingly

6. State of capital market

A company which decides to mobilise its resources from the capital market either it is financially strong or because of favourable conditions prevail in the capital market. It may declare higher rate of dividend. Suppose the firm realise difficult to raise resources from the

capital market because of either weak financial position or unfavourable conditions in the capital market. In this situation the company may declare only lower rate of dividends So the movement of capital market greatly influenced in the determination of rate of dividend

7. Past year Dividend Rate

Whenever the company formulates the dividend policy, the directors of the company must consider the dividend paid in past several years. The current dividend rate should be calculated as the average of past years rates.

8. Stability of Dividends

Stable dividend rate is one of the important factors for formulating dividend policy Irrespective of the profitability of the company it may declare constant rate of dividends Automatically it should establish the reputation of the company among the shareholders. A stable dividend gives security and confidence to the shareholders. Hence companies may prefer to maintain a stable dividend

9. Taxation Policy

Tax Policy announced by the Government also affects rate of dividend declared by the company. If the Government announces high rate of taxation it may reduce the earnings of the company and consequently the company shall declare only lower rate of dividend.

10. Liquid Resources

The dividend policy of the company is influenced by the availability of liquid assets. A company earns a good profit but it could not announce dividend to the shareholders because of insufficient liquid resources.

Let's Us Sum-Up

Dear Learners, In this Module we learned about the details of dividend and dividend policy. And also, Classification of Dividend, sources available for dividend, dividend policy general and finally determinants of dividend .

Self-Assessment Questions

1. Dividend constitutes the cash flow that accrues to -……..

(A) Holders (B) Equity holders

(C) Bond holders (D) All of the above

2. _____ refers to make-up of a firm's capitalization.

(A). Capital structure. (B) Capital budgeting.

(C) Equity shares (D)Dividend policy.

3.In retention growth model, percent of net income firms usually payout as shareholders dividends, is classified as –

(A) Payout ratio (B) Payback ratio

(C) Growth retention ratio (D) Present value of the ratio

4. Which of the following is an argument for the relevance of dividends?

(A) Informational content. (B) Reduction of uncertainty.

(C) Some investor's preferences for current income. (D) All of the above.

5. What should be the optimum Dividend pay-out ratio, when r = 15% & Ke = 12%

(A) 100% (B) 50% (C) Zero (D) All of the above.

******* MODULE 4 COMPLETED *******

MODULE 5

PRACTICAL PROBLEMS FOR DIVIDEND

5.1 WALTER'S MODEL

According to the Walters model. Dividend policy of the firm depends on the internal rate of return (r) and cost of capital (k) of the firm.

Assumptions of Walter's Model:

- The entire financing of the firm only through the retained earnings. It does not use the new equity or debt.
- Entire earnings are distributed or reinvested in the firm.
- Earnings of the firm and the rate of dividend do not change while determining the value.
- Walter formula for determining the market price per share is as follows,

$$\text{Market price per share } P = \frac{D + r / Ke\ (E - D)}{Ke}$$

P = Market price of an equity share
D = Dividend per share
r = Internal rate of return
E = Earnings per share
Ke = Cost of Equity Capital

CRITICISM OF WALTERS MODEL

Walters Approach has been criticised on account of various assumptions made by Prof. Walter in formulating his hypothesis.

- Internal rate of return remain constant is not true, because the rate of return changes with increase or decrease in investment.
- This model assumes that the cost of capital remains constant. Actually, the cost of capital also changes because of a firm's risk pattern does not remain constant.
- The basic assumptions of the Walters model is that all the investments are financed only through retained earnings. This assumption is not real. Actually, firms do raise funds not only from the retained earnings but also through equity and new debt also.

5.2 GORDON'S MODEL

Prof. Walter suggests that dividend decisions are relevant and it affects the value of the firm. Simply Gordon's model explicitly relates the market value of the firm to dividend policy. His model is based on the following assumption.

- The rate of return on investment is constant
- The firm has a perpetual long life
- The cost of capital of the firm remains constant
- The corporate taxes do not exist
- The firm has a constant growth rate
- Expansion of the firm is financed only through retained earnings
- The retention ratio (b) once decided remains constant. Therefore, the growth rate (g) (g = br) is also constant

PROBLEMS FOR DIVIDEND POLICY

Problem:1

The following information is available in respect of ABCD Ltd. Capitalization rate = 10%; Earnings per share Rs.40

Assumed rate of return on investments: i) 12% ii) 10% iii) 8%.

Show the effect of dividend policy on market price of shares applying Walter's formula when dividend pay-out ratio is a) 0% b) 50% c) 100%

Solution:

According to the Walter's model,

$$\text{Market price per share } P = \frac{D + (R / k)(E - D)}{k}$$

D = Dividend per share

K = Cost of Capital

E = Earnings per share

r = Return on Investment

(a) Market price per share if pay-out is 0%

Dividend = 0% EPS = Rs.40

r = 12% (G)	**r = 10% (N)**	**r = 8% (D)**
$\frac{R=12\%(G)}{10}$	$\frac{r10\%(N)}{10}$	$\frac{r8\%(D)}{10}$
P= 0+(.12/.10) (40-0)	0+(.10/.10) (40-0)	0+(.08/.10) (40-0)
$\frac{0 + (1.2)\ 40}{.10}$	$\frac{0+(1)\ (40)}{.10}$	$\frac{0+(.8)\ (40)}{.10}$
$\frac{0+48}{.10} \quad \frac{48}{.10}$	$\frac{0+40}{.10} \quad \frac{40}{.10}$	$\frac{0+32}{.10} \quad \frac{32}{.10}$
= Rs. 480	**= Rs. 400**	**= Rs. 320**

(b) Market price per share if pay-out is 50%

Dividend = 50% of EPS = 50% of Rs.40 = Rs.20

r = 12% (G)	**r = 10% (N)**	**r = 8% (D)**
$\frac{20 + (0.12 / .10)(40-20)}{0.10}$	$\frac{20 + (0.10 / .10)(40-20)}{0.10}$	$\frac{20 + (0.10 / .10)(40-20)}{0.10}$
$\frac{20 + (1.2)\ 20}{.10}$	$\frac{20+(1)\ (20)}{.10}$	$\frac{20+(.8)\ (20)}{.10}$

20+24 / .10 + 44 / .10	20+20 / .10 + 40 / .10	20+16 / .10 + 36 / .10
= Rs. 440	**= Rs. 400**	**= Rs. 360**

(c) Market price per share if pay-out is 100%

Dividend = 100% of EPS = 100% of = Rs.40

r = 12% (G)	**r = 10% (N)**	**r = 8% (D)**
$\frac{20 + (0.12 / 0.10)(40-20)}{10}$	$\frac{20 + (0.10 / .10)(40-20)}{10}$	$\frac{20 + (0.10 / .10)(40-20)}{10}$
r = 12% (G)	**r = 10% (N)**	**r = 8% (D)**
$\frac{40 + (0.12 / 0.10)(40-40)}{0.10}$	$\frac{40 + (0.10 / .10)(40-40)}{0.10}$	$\frac{40 + (0.8 / .10)(40-20)}{0.10}$
$\frac{40 + (1.2)(0)}{0.10}$	$\frac{40+(1)(0)}{0.10}$	$\frac{40+(.8)(0)}{0.10}$
40+0 / 0.10 + 40 / 0.10	40+0 / 0.10 + 40 / 0.10	40+0 / 0.10 + 40 / 0.10
= Rs. 400	**= Rs. 400**	**= Rs. 400**

Conclusion:

1. When r is 12% (r > k), market price is higher for a pay-out of 0%. Hence ideal pay-out is 0%.

(a) When r is 10% (r = k), dividend policy has no effect on share price.

(b) When r is 8% (r < k), Market price is the highest for a pay-out of 100%. Hence ideal pay-out is 100%.

Problem: 2

The Earnings per share of a Asia Ltd are Rs. 10. The rate of Capitalization is 10% and the retained earnings can be employed to yield a return of 20%.

The company is considering a pay-out of (a) 20% (b) 40% and (c) 60%.

Solution:

According to the Walter's model,

$$\text{Market price per share } P = \frac{D + (R / k)(E - D)}{K}$$

D = Dividend per share

K = Cost of Capital = 10% or 0.10

E = Earnings per share = Rs.10

r = Rate of Return = 20% or 0.20

(a) When the pay-out is 20%

Dividend = 20% of EPS = 20% of Rs. 10 = Rs.2

$$\textit{Market price per share, } P = \frac{2 + (.20)\ (.10)\ (10-2)}{0\ .10}$$

$$= \frac{2 + (2)\ (8)}{0.10} = \frac{2 + 16}{0\ .10} = \frac{18}{0.10} = \textbf{Rs. 180}$$

(b) When the pay-out is 40%

Dividend = 40% of EPS = 40% of Rs. 10 = Rs.4

$$\text{Market price per share, } P = \frac{4+ (.20)\ (.10)\ (10-4)}{0\ .10}$$

$$= \frac{4 + (2)\ (6)}{0.10} = \frac{2 + 12}{0\ .10} = \frac{16}{.10} = \textbf{Rs. 160}$$

(c) When the pay-out is 60%

Dividend = 60% of EPS = 60% of Rs. 10 = Rs.6

$$\text{Market price per share, } P = \frac{6 + (.20)\ (.10)\ (10-6)}{0\ .10}$$

$$= \frac{6 + (2)\ (4)}{0.10} = \frac{6 + 8}{0\ .10} = \frac{14}{.10} = \textbf{Rs. 140}$$

Problem: 3

The following information is available in respect of a firm. Capitalization rate= 15% EPS= Rs.100. Assumed rate of return on investment is i) 20% ii) 15% and iii) 10%.

Show the effect of dividend policy on market price of shares applying Walter's formula when dividend pay-out ratio is (a) 0% (b) 20% (c) 40% (d) 80% (e) 100%.

Solution:

(i) When rate of return = 20%	**When rate of return = 15%**	**When rate of return = 10%**
When D/P ratio – 0%	**Dividend per share = Rs.0**	
r	r	r

$P = \frac{D + \frac{(E-D)}{Ke}}{Ke}$	$P = \frac{D + \frac{(E-D)}{Ke}}{Ke}$	$P = \frac{D + \frac{(E-D)}{Ke}}{Ke}$
$\frac{0+\frac{.20\,(100-0)}{.15}}{.15} = \text{Rs. } 889$	$\frac{0+\frac{.15\,(100-0)}{.15}}{.15} = \text{Rs. } 667$	$\frac{0+\frac{.10\,(100-0)}{.15}}{.15} = \text{Rs. } 444$
(ii) When D/P ratio = 20%, Dividend per Share = $100 \times \frac{20}{100} = \text{Rs.}20$		
$P = \frac{20 + \frac{0.20}{0.15}(100-20)}{0.15} = \text{Rs. } 844$	$P = \frac{20 + \frac{0.15}{0.15}(100-20)}{0.15} = \text{Rs. } 667$	$P = \frac{20 + \frac{0.10}{0.15}(100-20)}{0.15} = \text{Rs. } 489$
(iii) When D/P ratio = 40%, Dividend per Share = $100 \times \frac{40}{100} = \text{Rs.}420$		
$P = \frac{40 + \frac{0.20}{0.15}(100-40)}{0.15} = \text{Rs. } 800$	$P = \frac{40 + \frac{0.15}{0.15}(100-40)}{0.15} = \text{Rs. } 667$	$P = \frac{40 + \frac{0.10}{0.15}(100-40)}{0.15} = \text{Rs. } 533$
(iv) When D/P ratio = 80%, Dividend per Share = $100 \times \frac{80}{100} = \text{Rs. } 80$		
When D/P ratio – 0%	**Dividend per share = Rs.0**	
$P = \frac{80 + \frac{0.20}{0.15}(100-40)}{0.15} = \text{Rs. } 711$	$P = \frac{80 + \frac{0.15}{0.15}(100-40)}{0.15} = \text{Rs. } 667$	$P = \frac{80 + \frac{0.10}{0.15}(100-40)}{0.15} = \text{Rs. } 622$
(iv) When D/P ratio = 100%, Dividend per Share = $100 \times \frac{100}{100} = \text{Rs. } 100$		
$P = \frac{100 + \frac{0.20}{0.15}(100-100)}{0.15} = \text{Rs. } 667$	$P = \frac{100 + \frac{0.15}{0.15}(100-100)}{0.15} = \text{Rs. } 667$	$P = \frac{100 + \frac{0.10}{0.15}(100-100)}{0.15} = \text{Rs. } 667$

Let's Us Sum-Up

Dear Learners, In this Module we learned about the details of Walters model and Gorden's model. And also, discussed about detailed problem of practical problem of dividend policy .

Multi-Disciplinary Questions

1. Which dividend may be consider as long term dividend

(a) Liberal dividend policy (b) Strict dividend policy

(c) Stable dividend policy (d) None of the above

2. The corporate income which is given to the shareholders as a return on investment is known as

(a) Share (b) Dividends (c) Income (d) Profit

3. When a company gives dividend as share or debenture of other corporate is known as

(a) Scrip dividend (b) Composite dividend (c) Interim dividend (d) None of the above

4. Which resolution is required to be passed for the declaration of dividend in the general meeting of the company?

(a) Ordinary resolution (b) Special resolution (c) Both (d) None of the above

5. Which of the following is the irrelevance theory?

(a) Walter model (b) Gordon model (c) M.M. hypothesis (d) Linter's model

******* MODULE 5 COMPLETED *******

ANSWERS TO CHECK YOUR PROGRESS	
Module 1	1. (C) Short-term borrowings 2. (C) Long term debt, preferred stock and common stock options 3. (A) Maximise owner's return and minimise the cost of capital 4. (C) Financial Structure 5. (B) Debt and equity

Module 2	1. (A) Debentures, Preference Share & Equity Share Capital 2. (A) K_e is to be same and Constant 3. (A) Constant 4. (B) David Durand 5. (A) NI Approach
Module 3	1. (D) All of the Above 2. (B) (it is unrealistic and euphoric) 3. (B) Profit maximization. 4. (C) Earnings Before Income and Taxes 5. (A) Income Statement
Module 4	1. (B) Equity holders. 2. (B) Equity shares. 3. (A) Payout ratio 4. (D) All of the above 5. (B) Zero
Module 5	1. (C) Stable dividend policy 2. (C) Income 3. (D) None of the above 4. (A) Ordinary resolution 5. (B) M.M. hypothesis

UNIT ACTIVITIES :

(V) Short Answers :

1. Write a short note on dividend policy?
2. What is dividend payout ratio? Explain.
3. What is the significance of stable dividend?
4. Write the assumption and criticism of Walters approach.
5. What are the types of dividend policy?
6. Explain determined of dividend policy.
7. Explain the form of dividend policy.
8. What is the significance of regular dividend policy?
9. Explain the theory of Walters approach.
10. Explain the theory of gardens approach

(VI) Essay Type Answers :

1.What is dividend policy? And explain its type.

2. Explain about Walters approach.

3. Explain forms of dividend and determinants of dividend policy.

4. Explain about garden's approach.

5. Differentiate Walter's theory and garden's theory.

6.What is meant by capital structure ? Explain the features of an appropriate capital structure.

7. What do you understand by capital structure? Explain the major determinants of capital structure.

8. Explain Net Income (NI) and Net Operating Income (NO I) approachs.

9. What is the Traditional View on capital structure?

10. Critically examine the Modigliani Miller Hypothesis of capital structure

11.What is a firm's capital structure? How is it different from financial structure?

12. Under the traditional approach to capital structure, what happens to the cost of debt and cost of equity as the firm's financial leverage increases?

13. Explain ROI-ROE analysis.

14. Explain the EBIT-EPS approach to the capital structure. Are maximizing value and maximizing EPS the same?

Glossary :

Capital Structure	Capital structure refers to the composition of a company's capital, which is the money it uses to finance its operations and growth. It includes both equity and debt, as well as any other long term financial obligations. The capital structure of a company can affect its ability to raise capital, its cost of capital, and its financial flexibility. It is a key consideration for companies when making financing decisions.
Debt	Debt refers to the amount of money borrowed by an individual or an organization from a lender, usually with a promise to pay back the borrowed amount along with interest within a specified period.

	In the context of capital structure, debt refers to the portion of a company's capital that is raised by borrowing funds from various sources such as banks, financial institutions, bondholders, and other lenders, rather than issuing shares or other forms of equity. The repayment of debt typically involves a fixed schedule of payments, including interest and principal, and failure to make timely payments can lead to penalties or default.
Equity	Equity refers to the ownership interest in a company after all the debts and obligations have been paid off. It represents the residual value of the assets of the company and is also known as shareholders' equity or net assets. Equity holders are entitled to a share in the profits of the company, usually in the form of dividends, and have the right to vote in the company's decision-making processes. Equity can be raised through the issuance of equity shares, preference shares, and other instruments that represent ownership in the company.
EBIT	Earnings before Interest and taxes.
EPS	Earnings per share
NI	NI Approach says more usage of debt will enhance the value of the firm.
NOI	NOI Approach says that the total value of the firm remains constant irrespective of the debt-equity mix. Arbitrage refers to an act of buying a security in one market having lower price and selling it in another market at a higher price. The consequence of such action is that the market price of the securities will become the same

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Unit-5

Working Capital Management

Working Capital Management –Definition and Objectives - Working Capital Policies - Factors affecting Working Capital requirements - Forecasting Working Capital requirements (problems) - Receivables Management - Working Capital Financing - Sources of Working Capital - Financial Analytics.

Unit Module Structuring

1. Introduction of working capital
2. Techniques of estimating working capital forecasting
3. Cash management and Receivable management
4. Techniques of inventory management
5. Working capital financing, Financial analytics

Unit Objectives

The objectives of this unit are:

- Explain working capital and the factors that influence it;
- Describe its importance in the financial management of firms;
- Discuss the operating cycle concept;
- Calculate the working capital requirement;
- Measure the financial impact of credit and working capital policies;
- Discuss the methods available to finance working capital requirements
- Explain the role of money market and banking policy; and
- Examine the problem of working capital control.

Table of Contents

Module: 1

WORKING CAPITAL MANAGEMENT

2.1.1 Introduction :

Working capital is a basic concept in financial management that refers to the difference between a company's current assets and short-term liabilities. It represents a company's available capital for day-to-day operations and is a measure of the company's short-term financial health and operating performance. Current assets typically include cash, accounts receivable, inventory, and other assets expected to convert to cash within a year. On the other hand, current liabilities include obligations that are due within the same period, such as accounts payable, short-term debt, and other liabilities. Working capital management involves monitoring and optimizing the composition of current assets and liabilities to ensure that the business can meet its short-term obligations while maintaining Maintain sufficient liquidity to continue operations. This involves making strategic decisions regarding cash flow management, inventory control, credit policies, and payments to suppliers. Effective working capital management is essential to maintain a company's financial stability, meet its operational needs, and enable it to grow. It plays a vital role in ensuring that a company has sufficient liquidity to meet its obligations, avoid insolvency, and take advantage of new opportunities. By balancing liquidity and profitability needs, working capital management improves the overall financial performance and long-term sustainability of a business.

1.1 TYPE OF CAPITAL

a) Fixed capital
b) Working capital

a) Fixed capital

Fixed capital means capital used for long-term investments of the company. For example, the purchase of fixed assets. It usually consists of a non-repetitive nature. Perpetual inventory is the minimum level of inventory needed for production and sales.

Fixed accounts receivable are amounts owed from customers due to credit sales. Cash reserves are necessary for daily expenses and emergencies. Prepaid expenses are payments for future goods or services. Having fixed working capital is crucial for uninterrupted operations.

b) working capital

Working capital is another part of the capital that is needed to meet the day-to-day needs of the business. For example, payment to creditors, salary paid to employees, purchase of raw materials, etc., usually recurring. It can easily be converted into cash. Hence it is also known as short-term capital.

1.2 Definition of Working Capital Management.

Working capital management is a business strategy designed to ensure that a business operates efficiently by monitoring and making the best use of its current assets and liabilities. working capital management is to enable a company to maintain sufficient cash flow to meet short-term operating expenses and short-term debt obligations. A company's working capital consists of its current assets minus its current liabilities.

1.3 Objectives of Working Capital Management

The primary objective of working capital management is to ensure a smooth operating cycle for a business. The secondary objective is to optimize the level of working capital and minimize the cost of these funds. The higher objective of financial management is to maximize wealth and this can be achieved through profit maximization accompanied by sustainable growth and development. For sustainable growth and development, the objectives of all stakeholders, including customers, suppliers, employees, etc. must be aligned with the growth of the organization.

1.4 Working Capital Concepts and Policies

1.4.1 concepts of working capital

There are two concepts of working capital

(i) Gross working capital

(ii) Net working capital

(iii) Gross working capital

It's also called 'working capital'. This represents the total amount of current assets of

the company. Current assets are assets that are expected to be converted into cash within a year or an operating cycle. stock of Raw materials, stock of finished goods, semi-finished goods, accounts receivable, accounts payable, prepaid expenses, cash at the bank, and cash in hand are examples of current assets.

ii) Net working capital:

It is not only short-term capital but also long-term capital is used to finance current assets. Short-term financing is provided by current liabilities (for example, third-party claims) Examples of current liabilities are trade payables, accounts receivable, and accounts payable. Net working capital refers to the excess of current assets over current liabilities

1.4.2. Working capital policies.

Working capital policy refers to the strategic guidelines and practices that a company adopts to manage its short-term assets and liabilities. These policies play an important role in determining how efficiently it operates, maintaining liquidity, and balancing risk and return.

The main types of working capital policies

1.4.2.1. Conservative working capital policy:

A conservative policy prioritizes liquidity and security over returns. Under this policy, the company maintains a higher level of current assets than current liabilities, ensuring that the company has enough resources to cover short-term obligations and unexpected expenses.

Benefits: reduced risk of insolvency, greater financial stability, and protection against unforeseen events.

Disadvantages: Higher costs of holding inventory and excess cash, potentially lower return on investment due to conservative asset management.

Examples: holding large cash reserves, offering generous credit terms to customers, maintaining high inventory levels.

1.2.2.2. Aggressive working capital policy:

Aggressive policy aims to maximize profits by minimizing investment in current assets. The firm maintains lower levels of current assets and relies more on short-term financing.

Benefits:

Lower costs of holding inventory, potentially higher return on investment due to

efficient use of resources, and improved profitability.

Disadvantages:

Increased risk of liquidity problems, greater vulnerability to cash flow disruptions, and potential difficulty meeting short-term obligations. For example, maintaining minimum cash reserves, offering tighter credit terms to customers, maintaining lower inventory levels, and relying on short-term borrowing.

1.2.2.3. Working capital reconciliation policy:

This policy involves adjusting the maturity profile of assets and liabilities. Long-term assets are financed with long-term funds and short-term assets are financed with short-term funds.

Benefits: Minimizes liquidity risk, reduces the risk of funding mismatches, and ensures that funding is available when liabilities become due.

Disadvantages: Requires careful planning and coordination, which can result in higher costs if the company has to frequently refinance short-term obligations.

For example, use long-term loans to finance fixed assets and short-term loans or lines of credit to finance seasonal inventory needs.

1.2.3. considerations in developing a working capital policy

Nature of the business: Different business sectors have different working capital requirements. For example, retail businesses may require higher levels of inventory, while service-oriented businesses may have higher receivables.

Business cycle and seasonality: Businesses with seasonal demand may adopt different policies during peak and off-peak periods.

Market conditions: Economic conditions, interest rates, and market trends can influence a company's working capital policy.

Company size and financial strength: Larger companies with strong financial positions may adopt more aggressive policies, while smaller companies may prefer more conservative approaches.

Management and stakeholder risk appetite: The risk tolerance of a company's management and stakeholders can influence the choice of working capital policy.

1.3. Types of working capital

i) Permanent working capital

ii) Temporary working capital

iii) Semi-variable working capital

Working Capital may be classified into three important types based on time.

i) Permanent Working Capital: It is also known as Fixed Working Capital. It is the capital that business concern must maintain a certain amount of capital at the minimum level at all times. The level of Permanent Capital depends upon the nature of the business. Permanent or Fixed Working Capital will not change irrespective of time or volume of sales.

ii) Temporary Working Capital: It is also known as variable working capital. It is the amount of capital which is required to meet the Seasonal demands and some special purposes. It can be further classified into Seasonal Working Capital and Special Working Capital. The capital required to meet the seasonal needs of the business concern is called Seasonal Working Capital. The capital required to meet the special exigencies such as launching extensive marketing campaigns for conducting research, etc.

iii) Semi-Variable Working Capital: A certain amount of Working Capital is in the field level up to a certain stage and after that, it will increase depending upon the change of sales or time.

1.4 Needs of Working Capital

- To purchase raw materials, components, and spares.
- To pay wages and salaries.
- To incur day-to-day expenses and overhead costs such as fuel, and power.
- To meet selling costs such as packing, advertisement
- To provide credit facilities to customers.
- To maintain inventories of raw materials, work in progress, stores, spares, and finished stock.

The amount of working capital needed increases with the growth and expansion of the business until it attains maturity period.

1.5 Importance of Working Capital

The Importance of Working capital is an important part of the business :

Working capital is an important part of business :

1.Higher return on capital: Businesses with less capital mean a higher cost of

capital. Thus, shareholders benefit from receiving a higher return for every dollar they invest in the business.

2.Improve your credit report and liquidity: Being able to meet short-term obligations is a long- term strategy. This is a good indicator of the credit risk of the spouse. Proper working capital management enables a company to pay its short-term debts on time. This may include the costs of purchasing raw materials, payroll, and other operating expenses.

3.Higher profitability: credit and debt management is an important way to increase the profitability of small and large businesses.

4.Superior capital: A lot of money is tied up in working capital, so companies that manage it well can benefit from the extra cash and reduce their dependence on foreign currency. This is especially important for small businesses, which have limited access to external funding sources. Also, since small businesses often use their cash to pay their bills in cash, good working capital management can help businesses allocate resources and improve financial management.

5. Increased Business Value: Companies that manage their working capital effectively generate free cash flow, increasing business value and enterprise value

6. Good financial practices: Companies that maintain good relationships with their business partners and pay their customers on time benefit from good financial practices, such as discounts from suppliers and financial partners.

7. Continuous supply: Companies that pay their customers on time benefit from a regular flow of raw materials, ensuring that production is maintained and that goods are received from customers on time.

8. Ability to face shocks and peaks in demand: Good working capital management helps companies overcome problems and increase production when orders arrive. big surprise Competitive advantage: Companies with good supply chains often sell their products at a lower price compared to companies with poor supply chains

1.2.7. Factors Determining the Working Capital Requirements.

1. Nature of The Business
2. Production Policies
3. Length of Manufacturing Cycle
4. Growth And Expansion

5. Capital Structure of The Company
6. Policies of RBI
7. Terms of Purchases And Sales
8. Profitability
9. Dividend Policy Seasonal Variation
10. Irregularities of Supplies
11. Sales Volume Market Condition
12. Other Factors.

LETS SUM UP :

Dear learners, we know about this section fixed working capital represents the stable and ongoing investment in current assets required for the consistent functioning of a business. It is a critical aspect of financial planning and management, as it provides a foundation for the company's operational stability and long-term growth. Moreover needs, importance, types also we learn.

MULTI CHOICE QUESTIONS

1. What are the aspects of working capital management?

a. Inventory management b. Receivable management

c. Cash management d. All of the above

2. .To financial analysts, "working capital" means the same thing as _____.

a.total assets b.fixed assets

c.current assets d.current assets minus current liabilities.

3. Which of the following would be consistent with an aggressive approach to financing working capital?

a.Financing short-term needs with short-term funds.

b.Financing permanent inventory buildup with long-term debt.

c.Financing seasonal needs with short-term funds.

d.Financing some long-term needs with short-term funds.

4. The amount of current assets that varies with seasonal requirements is

referred to as _____ working capital.

a.permanent b.net c.temporary d.gross

5. Working Capital Turnover measures the relationship of Working Capital with:

(a)Fixed Assets (b)Sales, (c)Purchases, (d)Stock.

Module -2

Techniques of Estimating Working Capital Forecasting

1. Conventional Method (Or) Cash Cycle Method (Or) Cash Forecasting Method

Conventional method The conventional method of estimating working capital requirements relies on a systematic and traditional approach to determine the amount of working capital a business needs. This method involves analyzing the individual components of working capital - such as inventory accounts receivable and accounts payable – and calculating the working capital required for each item based on specific criteria

2. Operating Cycle Method.

The operating turnover method is a widely used method for estimating a company's working capital needs. This method focuses on the time it takes for a business to convert its raw materials into finished goods, sell those goods and collect cash from customers. The operating cycle measures the time between the sale of inventory and the collection of cash from receivables. The longer the operating cycle, the more working capital is needed, because the company needs to finance long-term operations

3. Percentage of Sales Approach.

Percentage of Sales Approach is a simple method to estimate a company's working capital needs based on its expected sales. This method works on the assumption that there is a direct and constant relationship between a company's sales and its working capital needs. This means that as sales increase, working capital requirements increase and vice versa.

4. Balance Sheet Method.

The balance sheet method is a basic tool in financial analysis that shows the structural strength and longevity of the company. Suppose a company has $500,000 in assets, $300,000 in liabilities, and $200,000 in stockholders' equity. Using the balance sheet method, analysts can assess a company's financial stability, assess its debt levels, and compare these numbers to industry standards or historical data. to determine its financial health.

5. Regression Method.

The regression method is a statistical method used to understand the relationship between variables and predictors. It is widely used in various fields, including finance, economics, biology and social sciences to model and analyze the relationship between dependent and independent variables. Here is a summary of the reverse process.

2.2 Procedure for Workout the Problems of Working Capital

Statement showing working capital (Specimen form)

[TCA – TCL = WC]

Current assets :	**Rs**
Raw materials	xx
Work in Progress	xx
Finished goods	xx
Debtors	xx
Cash	xx
Total current assets	xx
Less : Current liabilities:	
Creditors	xx
Wages	xx
Other expenses	xx
Total current liabilities	xx
Working captal (TCA – TCL)	xx
Add : Contingences if any	xx
Total working capital required	xx

Workings :

i) First of all we have to find out number of units. It is the basis for computation of cost of various elements.

ii) Computation of following elements of cost :

Raw material cost	xx

Labour cost	xx
Overhead cost	xx
Cost of finished goods	xx
Cost of work in progress	xx
Cost of debtors	xx

iii) Computation of finished goods :

	Rs.
Raw material cost	xx
Labour cost	xx
Overhead cost	xx
Cost of finished goods	xx

The finished goods value and work-in-progress value will be the same. Suppose the production occurs evenly throughout the year given in the problem means we have to find out the work-in-progress value for separate calculation. At that time Labour costs and Overhead costs were reduced to half.

iv) Computation of work in progress :

	Rs
Raw material cost	xx
Labour cost	xx
Overhead cost	xx
Work in progress	xx

v) Cost of Debtors:

The value of debtors should be calculated either including the profit element or excluding the profit element. Normally cost element details are given in percentages, better we may calculate the debtors excluding the profit element.

Problem 1 :

From the following information prepare a statement in columnar form showing the working capital requirements i) In total and ii) As regards each constituent part of working capital.

Budgeted sales (Rs 10 per unit) Rs 2,60,000 p.a.,

Analysis of Costs	**Rs**
Raw Materials	3.00
Direct Labour	4.00
Overheads	2.00

Total cost	9.00
Profit	1.00
Sales	10.00

It is estimated that

i) Raw materials are carried in stock for three weeks and finished goods for two weeks.

ii) Factory processing will take three weeks.

iii) Suppliers will give full five weeks credit.

iv) Customers will require eight weeks credit.

It may be assumed that production and overheads accure evenly throughout the year.

Solution :

Statement of Working Capital Requirements

Current Assets		Rs.
Raw materials 78,000 x $\frac{3}{52}$	=	4,500
Work in Progress (Note)	=	9,000
Finished Goods 2,34,000 x $\frac{2}{52}$	=	9,000
Debtors 2,60,000 x $\frac{8}{52}$	=	40,000
		62,500
Less : Current Liabilities		
Trade Creditors (5 weeks) $\frac{5}{52}$ x 78,000	=	7,500
Working Capital Required		55,000

Working Notes

i) Number of Units	=	26,000
ii) Finished Goods		
Raw Materials 26,000 x 3	=	78,000
Direct Labour 26,000 x 4	=	1,04,000
Overheads 26,000 x 2	=	52,000
Finished Goods		2,34,000
iii) Work in Progress		
Raw Material 78000 x $\frac{3}{52}$	=	4,500

Labour 1,04,000 x $\frac{3}{52}$ x $\frac{1}{2}$	=	3,000
Overhead 52,000 x $\frac{3}{52}$ x $\frac{1}{2}$	=	1,500
Work in Progress		9,000

Note:

i) Normally Finished goods and work in progress are taken as the same value. Suppose wages and overheads accrue evenly throughout the year given in the problem, we have to find out the work-in-progress value separately. At that time, the work-in-progress value is reduced to half.

ii) At the time of calculating working capital, debtor value will be taken as either including the profit element or excluding the profit element. In this problem, debtor value is calculated based on including the profit element.

Problem 2 :

The management of G Ltd has called for a statement showing the working capital needed to finance a level of 3,00,000 units of output for the year. The cost structure for the company's product, for the above-mentioned activity level is detailed below.

Cost Element	**Cost per unit (Rs)**
Raw materials	20
Direct Labour	5
Overheads	15
Total Cost	40
Profit	10
Selling Price	50

Past trends indicate that raw materials are held in stock on average for two months.

Work in progress will approximate half-a months of production Finished goods remain in a warehouse on average for a month.

Suppliers of materials extend a month's credit.

Two months' credit is normally allowed to debtors.

A minimum cash balance of Rs.25,000 is expected to be maintained.

The production pattern is assumed to be even during the year. Prepare the statement of working capital determination.

Solution: Statement of Working Capital Requirement

Current Assets		**Rs.**
Raw materials 60,00,000 x $\frac{2}{12}$	=	10,00,000
Work in Progress	=	3,75,000
Finished goods 1,20,000 x $\frac{1}{12}$	=	10,00,000
Debtors 1,50,00,000 x $\frac{2}{12}$	=	25,00,000
		48,75,000
Less: Current Liabilities		
Sundry Creditors 60,00,000 x $\frac{1}{12}$	=	5,00,000
		43,75,000
Add: Minimum Cash Balance	=	25,000
Working Captial	=	44,00,000
Workings		
i) Finished Goods		
Raw Materials 3,00,000 x 20	=	60,00,000
Direct Labour 3,00,000 x 5	=	15,00,000
Overheads 3,00,000 x 15	=	45,00,000
Finished Goods		1,20,00,000
ii) Work in progress		
Raw Materials 60,00,000 x $\frac{5}{12}$	=	2,50,000
Labour 15,00,000 x $\frac{0.5}{12}$ x $\frac{1}{2}$	=	31,250
Overheads 45,00,000 x $\frac{0.5}{12}$ x $\frac{1}{2}$	=	93,750
Work in Progress		3,75,000

LETS SUM UP :

Dear learners working capital helps to businesses various way like short-term, long-term Liquidity guarantees that the organization can fulfill its immediate debts. Operational efficiency boosts the seamless execution of everyday tasks. Profitability is enhanced by decreasing expenses related to working capital, such as interest and holding costs, leading to higher profits. Reduces the likelihood of bankruptcy by

maintaining adequate cash flow. In general, it is essential for a company to effectively manage its working capital to ensure financial stability, meet short-term financial obligations, and facilitate long-term expansion.

MULTI CHOICE QUESTIONS

1. Working Capital Turnover measures the relationship of Working Capital with:

(a) Fixed Assets, (b) Sales, (c) Purchases, (d) Stock.

2. Which of the following is not included in incremental A flows?

(a) Opportunity Costs, (b) Sunk Costs,

(c) Change in Working Capital, (d) Inflation effect.

3. Positive working capital means that __

(a) The company is able to pay off its long-term liabilities.

(b) The company is able to select profitable projects.

(c) The company is unable to meet its short-term liabilities.

(d) The company is able to pay off its short-term liabilities.

4. Under which type of bank borrowing can a borrower obtain credit from a bank against its bills?

(a) Letter of Credit (b) Cash

(c) Purchase or discounting of bills (d). Working Capital Loan

5. Working capital is a highly effective barometer of a company's efficiency and effectiveness.

(a) Operational and servicing (b) Longterm

(c) Operational and financial (d) Positive and negative

Module - 3

CASH MANAGEMENT AND RECEIVABLE MANAGEMENT

3.Cash management and Receivable Tools

CASH MANAGEMENT

Every business must give more attention to maintaining the required cash. cash is an important element for the successful operation of every business. It is that concerned with the collection, payment, and investment of cash in efficient management.

3.1 Motive for Holding Cash

- Transaction motive
- Precautionary motive
- Speculative motive

3.2 Objectives of cash management

- Controlling cash inflow and outflow
- Meeting payment schedule Maintain
- optimum cash balance

3.3 Techniques involved in Accelerating cash inflows

- Concentration banking
- Lock-box system
- Prompt payment by customers
- Immediate conversion of payment into cash

3.4 Cash outflows

Cash outflow represents daily expenses during a business's – operations, investments, financing activities, and other financial transactions. It includes payments for various expenses, such as operating costs, salaries, debt repayments, non-current asset investments, and other financial obligations.

3.4.1 Methods of cash outflows

- Payments Through Drafts
- Payroll Funds Adjustments
- Payment Should Made on The Last Date Through Inter-bank Transfer
- Centralized Payments

3.5 Cash management models

1. Operating cycle model
2. Inventory model
3. Stochastic model
4. Probability model

3.5 William J. Baumol model

William J. Baumol developed a model that is usually used in inventory management but has its application in determining the optimal cash balance. Baumol found similarities between inventory management and cash management. As Economic Order Quantity (EOQ) in inventory management involves a trade-off between carrying costs and ordering cost, the optimal cash balance is the trade-off between opportunity cost or cost of borrowing or holding cash and the transaction cost (i.e., the cost of converting marketable securities into cash, etc.) The optimal cash balance is reached at a point where the total cost is the minimum. The graph below shows the optimum cash balance.

The Baumol model is based on the following assumptions

1. The cash needs of the firm are known with certainty.
2. The cash disbursements usage of the firm occur uniformly over some time and are known with certainty.
3. The opportunity cost of holding cash is known and it remains constant.
4. The transaction cost of converting securities into cash is known and remains Constant

The Baumol model can also be represented

$$C = \frac{\sqrt{2 \quad \times P}}{S}$$

Where,

C = Optimum Cash balance

u = Annual (or monthly) cash disbursements

F = Fixed cost per transaction

S = Opportunity cost of holding cash

3.6 THE MILLER–ORR MODEL

- The MO model provides for two control limits–the upper control limit and the lower control limit as well as a return point.
- If the firm's cash flows fluctuate randomly and hit the upper limit, then it buys sufficient marketable securities to come back to a normal level of cash balance.
- Smilarly, when the firm's cash flows wander and hit the lower limit, it sells sufficient marketable securities to bring the cash balance back to the normal level.

3.7 FACTORS DETERMINING CASH FLOW

1. **Operating Decisions**: Managerial decisions regarding all the attributes of profit affect cash flow.
2. **Capital Expenditure Decisions:** The acquisition or disposal of long-lasting assets results in depreciation charges against profits.
3. **Inventory Decisions:** Changes in the amounts tied up in stocks increase or decrease the cash flow.
4. **Customer Credit Policies:** An increase in customer credit delays the cash inflow, but the reduction in credit accelerates it.
5. **Supplier Credit Policies**: An increase in supplier credit creates a positive cash flow, decelerating the cash outflow. Reduction in supplier credit accelerates the cash outflow.
6. **Financial Obligations:** Interest and dividend payments and other contractual repayments have an impact on cash flow.
7. **Investing Decisions:** The utilization of surplus funds or, conversely, the liberation of funds, affects cash flow.
8. **Financing Decision:** The acquisition. of additional capital on a long-term or

short-term basis has an impact on the cash flow

3.8 FOUR FACETS OF CASH MANAGEMENT

1. Cash planning (Cash budget)
2. Managing the cash flows
3. Optimum cash level
4. Investing surplus cash

Problem 1 :

Monthly cash requirements	Rs.90,000
Fixed cost per transaction	Rs.15
Interest rate on marketable securities	6% p.a.,

You are required to calculate the optimum cash balance

Solution :

Optimum Cash Balance : C $= \sqrt{\frac{2u\ x\ p}{s}}$

U = Rs.90,000

P = Rs.15

S = 6% p.a. 0.06

$\sqrt{\frac{2\ x\ 90000\ x\ 15}{0.06}}$

Rs. = 6708.20

RECEIVABLE MANAGEMENT

Receivable Management :

Receivables management refers to the decision a business makes regarding to the overall credit, collection policies, and the evaluation of individual credit applicants. Receivables Management is also called trade credit management.

.B.1 Factors Influencing Receivables Management

1. Quantum of Credit Sales
2. Credit Policies
3. Terms of Trade
   a. Credit Period
   b. Cash Discount
4. Credit Collection Efforts
5. Habits of Customers

Problem 1:

A company plans to extend credit facilities to the following categories of customers.

A) Customers with a 10% risk of non–payment and

B) Customers with a 30% risk of non–payment.

The incremental sales expected in the case of category (A) are Rs.40,000 while in the case of category (B) they are Rs.50,000.

The cost of production and selling costs are 60% of sales while collection cost amount to 5% of sales in the case of category (A) and 10% of sales in the case of category (B).

You are required to advise the firm about extending credit facilities to each of the above categories of customers.

Solution :

I. Extending Credit Facilities to Category A Customers (10% risk of non-payment)

	Rs.
Incremental Sales	40,000
Less : 10% risk of non–payment of	4,000
Net sales revenue	36,000
Less : Production and selling costs (60% Sales)	24,000
	12,000

	Rs.
Less : Collection costs (5% of sales)	2,000
Incremental Profit	10,000

Result : If 10% risk of non-payment the firm earn a profit of Rs.10,000

II. Extending credit facilities to Category B Customers (30% risk of non-payment)

Sales	50,000
Less : 30% risk of non – payment	15,000
Net sales revenue	35,000
Less : Production and selling costs (60% of sales)	30,000

	5,000
Less : Collection costs (10% of sales)	5,000
Incremental Profit	0

Result: If 30% risk of non-payment the firm does not get any gain or loss.

Comment: The firm can extend credit facilities to 4category A customers with a 10% risk group because it gives an additional profit of Rs.10,000. On the other hand, the firm neither gains nor loses on account of extending credit to customers with a 30% risk group. Hence the firm should not extend credit to category B.

LETS SUM UP :

Dear learners, Cash management helps with the process of collecting, managing, and effectively using cash in a business. The main objective of cash management is to ensure that the company has enough cash to meet its short-term obligations such as paying bills, wages, and other expenses, and to use excess cash to build in good.

MULTI CHOICE QUESTIONS

1. Which of the following statements most accurately describes the modern approach to cash management?

(A) Cash Management involves the efficient disbursement of cash.

(B) Cash management involves the efficient collection and disbursement of cash.

(C) Cash management involves the efficient processing, collection, and depositing of cash.

(D) None of the above

2. Which of the following is not an objective of cash management ?

(A) Maximization of cash balance

(B) Minimization of cash balance

(C) Optimization of cash balance

(D) Zero cash balance

3. Selling accounts receivable to a third party at a reduced price is part of the collection process known as –

(A) Settling (B) Writing off (C) Suing **(D) Factoring**

4. The goal of receivables management is to maximize the value of the firm by achieving a trade-off between –

(A) Risk & Profitability (B) Liquidity & Profitability

(C) Return & Profitability (D) Return & Liquidity

5. Which of the following function is required to be performed by the finance manager in relation to proper management of receivables?

(A) To obtain the optimum (not maximum) value of sales.

(B) To adopt a relaxed policy for administrative expense.

(C) To increase the opportunity cost of funds blocked in the receivables.

(D) To make more purchases at bigger discounts.

Module - 4

INVENTORY MANAGEMENT

INVENTORY MANAGEMENT

Introduction

Inventory management is tracking the goods and materials a business uses to produce or sell products. Inventory management aims to ensure there's always enough stock available to fulfill customer orders while minimizing the risks and costs of holding inventory. Efficient inventory management and regular inventory audits ensure you always have the right quantities of items in the right place ready to meet demand. In accounting, inventory includes goods in three stages of production: raw materials, in-progress goods, and finished goods

4.2 Objectives of inventory management

Here we explain the objectives of inventory management:

1. Material availability

The main objective of inventory management is to ensure material availability. If there is enough stock, the production process can continue. Material shortages can cause serious damage to the market and the company's profits. It also reduces sales, which negatively affects production.

2. Minimum Wastage

A successful warehouse management system always helps to minimize loss and thereby also minimize losses. Monitoring, controlled inspections, and uncontrolled loss control are some of the purposes of inventory management software to help businesses prevent and reduce waste.

3. Better product sales inventory management can be used to calculate the sales quantity of a product. Selling is one of the most important stages of the process. Therefore, understanding the current sales situation and making future assumptions based on the analysis are critical factors in successful forecasting

4. Better customer services

one of the main goals of warehouse management and control is better customer service. With proper inventory management, customers can gain trust and get timely deliveries and a fast production process

5. Maintenance of inventory

The Inventory must be available in all production phases, from raw materials to finished products. We must ensure enough material is in stock to meet the customer's demand without problems.

6. Cost-Effective Storage

warehousing is a way to reduce storage costs. With the right management techniques, companies can avoid excess inventory and duplicate inventory orders and help minimize storage costs

7. Minimum inventory cost value

An organization can negotiate discounts and other regular and bulk purchase incentives to reduce total costs. In addition, it can help reduce the cost of inventory

8. Better product sales inventory management can be used to calculate the sales quantity of a product. Selling is one of the most important stages of the process. Therefore, understanding the current sales situation and making future assumptions based on the analysis are critical factors in successful forecasting

9. Better customer services

one of the main goals of warehouse management and control is better customer service. With proper inventory management, customers can gain trust and get timely

4.3 Kinds of inventory

1.Raw material

Raw materials are anything that is processed to create a final product. In a biscuit manufacturing company, the raw materials are milk, sugar, flour, etc., which are used in various production units. When talking about raw materials, it is important to understand that the raw materials used by a manufacturing company come from suppliers or are a by-product of the process.

2.Work in Progress

When raw materials are sent for processing but not yet accepted as finished goods, this section is considered a work in progress. Biscuit makers process raw materials, manufacture biscuits, and check quality before final packaging. All cookies awaiting quality assurance are considered work in progress. Simply put, the work-in-progress category is anything that has been processed but not yet released for sale. but not yet released for sale.

3.Finished Goods.

A finished product is a final product that is ready for sale on the market. This product has gone through all stages of production and quality control. Thus, for the cookie manufacturer, the last batch of cookies that passes through quality controls and is sent to the market for sale becomes a finished product. Raw materials, finished goods, and finished goods are the three main inventory items identified in a company's financial statements. Other species are kept for prevention or other special purposes.

4. Consumables and Spares or MRO Inventory

MRO stands for Maintenance Repair and Operations, and most of this type of inventory is related to the manufacturing industry. Although the MRO team is not considered an asset on firm books, it plays an important role in the day-to-day operations of that organization. MRO supplies are used for the maintenance, repair, and maintenance of machinery, equipment, and other equipment used in the production process. Examples of MRO items include lubricants, coolants, wear, gloves, nuts, bolts, and screws.

4.4 Tools and Techniques of inventory management

1. **ECONOMIC ORDER QUANTITY MODEL (EOQ) :**

The Economic Order Quantity (EOQ) is a formula used in inventory management to determine the optimal order quantity that minimizes total inventory costs. It's a balancing act between carrying costs (the cost of holding inventory) and ordering costs (the cost of placing and receiving orders).

The EOQ formula is: $EOQ = \sqrt{2CO} / 1$

EOQ= ECONOMIC ORDER QUANTITY

Where: C = Annual demand rate (number of units sold or used per period) O = Ordering cost per order

1 = Holding cost per unit per period

By calculating EOQ, businesses can strike a balance between the costs of holding excess inventory and the costs of ordering too frequently. This helps optimize inventory levels and minimize costs. Its two aspects

i) Ordering cost

ii) carrying cost

i) Ordering costs : include all expenses for purchasing and receiving purchase orders and inventory items. This may include administrative costs such as paperwork, taxes, insurance, etc. It is important for companies to understand these costs because they have a direct impact on the total budget that the company spends on inventory.

ii) carrying cost : Now you know the carrying costs definition and that its components may differ depending on nature or size of business, even may vary product to product

1. ABC ANALYSIS : The ABC analysis is based on the proportions that (a) managerial time and efforts are scare and limited, and (b) some items of inventory are more important than orders. The ABC analysis classifies various inventory items into three sets or groups of priority and allocates managerial efforts in proportion of the priority. The most important items are classified as class A, Those of intermediate importance items are classified as B And the remaining items are classified as class C The financial manager should monitor different items belonging to different groups in that order of priority. Utmost attention is required for class A, followed by items in class B and then in class C

3.VED analysis is a method used in inventory management to classify products according to their importance. It classifies inventory items into three groups:

vital: These are items critical to the organization's operations. They have a significant impact on the organization and can be important in production or service delivery. As such, they require close monitoring and often a higher level of security.
Essential: These items are important, but not as important as essential items. They have a moderate impact on operations and may require moderate management and a safety margin.
Desirable: These items are nice, but not essential for day-to-day operation. They have little impact on operations and may require minimal monitoring and security.VED analysis helps organizations prioritize their inventory management efforts and resources, focusing more on essential products and devoting fewer resources to desirable products. This approach can be particularly useful for optimizing inventory and ensuring that important products are always available when needed.

4. Determining the appropriate stock level

It is crucial for effective inventory management. This involves balancing the costs of holding too much stock against the risks of running out of stock. Here are the key steps and methods used in determining stock levels:
Minimum Stock Level: The lowest quantity of a product that a company must have to ensure smooth operations without running out. Maximum Stock Level: The highest quantity of a product that can be stored without incurring unnecessary holding costs.

Reorder Level: The inventory level at which a new order should be placed to replenish the stock before it runs out

5. Determination of safety stock

Determining safety stock involves balancing the cost of holding additional stock against the risk of default. Using statistical methods and evaluating inventory levels, companies can improve operational efficiency and customer satisfaction by maintaining optimal safety stock. Determining the appropriate safety stock level is essential for mitigating the risks associated with demand variability and supply chain uncertainties. Safety stock acts as a buffer to prevent stockouts and ensure smooth operations.

1. The inventory turnover ratio

dear learners it is a key metric used to assess the efficiency of inventory management. It measures how often a company's inventory is sold and replaced over a specific

period. A higher turnover ratio indicates effective inventory management, while a lower ratio may suggest overstocking or inefficiencies.

formula is cost of goods sold cost of goods sold t, average inventory at cost

7. Just in time (JIT) inventory system

JIT is a form of inventory management that requires working closely with suppliers so that raw materials arrive as production is scheduled to begin, but no sooner. The goal is to have the minimum amount of inventory on hand to meet demand. inventories are received and maintained by concern in time.

8. Inventory reports

Inventory reports can help you understand and manage your inventory and guidlines from the inventory, like a, shipments, on-hand items, and inventory. Book reports can handle all these aspects. They will be your companion if you need to have your back and have enough supplies. You can access important information including products in stock, products you want to buy immediately, how many items are used, purchase restrictions and post-delivery management of your ordered products.

4.5 classification and codification

Classification 'refers to the systematic division, grouping or categorization of materials or store items with reference to some common characteristic. Classification of materials can be made on different bases namely nature, manufacturing process, value, purpose etc. For identification of materials being purchased and stored it is necessary that they should be properly classified

4.6 Methods of inventory valuation.

1. First-In, First-Out (FIFO)

FIFO is an inventory valuation method where the oldest inventory items are sold first. This is particularly useful for perishable goods.

Advantages:

Ensures older stock is used first, reducing the risk of obsolescence.

Reflects a logical flow of inventory.

Disadvantages:

May not always match the actual physical flow of inventory in some industries

2. Last-In, First-Out (LIFO)

LIFO is an inventory valuation method where the most recently acquired items are sold first. This method can be beneficial for tax purposes in some jurisdictions.

Advantages:

Can result in tax benefits during periods of inflation.

Matches recent costs with current revenues.

Disadvantages:

Not accepted under International Financial Reporting Standards (IFRS).

May result in outdated inventory values on the balance sheet

3. Average price method

i) Simple average price method

ii) weighted average price method other methods

4. Base stock method

5. Inflated price method

6. Specific price method

7. Highest in first out method

8. Replacement price method

9. Current standard price method

4.7 Using inventory accounting software

Inventory accounting can be a time-intensive, frustrating process for retail businesses - especially small or independent teams. But it doesn't have to be a rush of spreadsheets and paper receipts the week before every tax deadline. There's reliable accounting software available to help automate and digitize as much as possible, the main two being:

1.Xero

2.QuickBooks

These programs won't 'do your accounts for you'. But they will make it much simpler to organize and present come the end of tax year. Both Xero and QuickBooks do also have tools available to help with the inventory side of accounting.

Problems

Problem 1

Calculate the minimum stock level, maximum stock level and re-order level from the following information.Minimum consumption 100 Kgs per day; Maximum consumption 150 Kgs per day; Normal consumption 120 Kgs per day ; Re-order period 10 – 15 days; Re – order quantity 1500 Kgs; Normal re – order period 12 days; Time for emergency supplies 3 days.

Solution :

1. Re – order level :

Maximum consumption x Maximum re – order period

= 150 x 15 = 2,250 Kgs.

2. Minimum level :

Re – order level – (Normal consumption x Normal re – order period)

= 2,250 – (120 x 12) = 2,250 – 1,440 = 810 Kgs.

3. Maximum level :

Re – order level + Re – order quantity – (Min. Consumption x Min. re – order period)

= 2,250 + 1,500 – (100 x 10)

= 3,750 – 1,000 = 2,750 Kgs.

4. Danger level :

Minimum consumption x Emergency delivery time

100 x 3 = 300 Kgs.

Problem 2 : ECONOMIC ORDER QUANTITY

Cost of material is Rs.30 p.u. Total amount needs are 800 units. Annual return on investments is 10%. Rent, insurance and taxes per unit, per annum Re.1. Cost of placing an order is Rs.100. calculate the Economic Order Quantity.

Solution :

Economic Order Quantity = $\sqrt{\frac{2\,AO}{C}}$

A – Annual consumption = 800 units

O – Cost of placing an order = Rs.100

C – Carrying Cost = Interest + Rent , Insurance & Taxes

Interest Cost = 10% on the material price

= 10% of Rs.30 = Rs.3 p.u.

Insurance, Rent and Taxes = Re.1.p.u.

Total carrying cost p.u. = Rs.3 + Re.1 = Rs.4

E.O.Q. $= \sqrt{\frac{2\ X\ 800\ X\ 100}{4}} = 200$ U

Problem 3

From the following data, calculate the value of closing inventory according to the Last-in-First-out method on March 31, 2021, using

i) Periodic inventory system, and

ii) Perpetual inventory system

March 1	Stock in Hand	400 units @ 7.50 each
Purchases :		
March 5		600 units @ 8.00 each
March 15		500 units @ 9.00 each
March 25		400 units @ 8.50 each
March 30		300 units @ 9.50 each
Issues :		
March 3		300 units
March 10		500 units
March 17		400 units
March 26		500 units
March 31		200 units

Solution :

i) Value of closing inventory according to the LIFO method on March 31, 2021, using the periodic inventory system

Total units = Opening stock + Purchases = 400 + 1800	=	2,200
Less: Units issued		1,900
Balance in Stock		300
Value of Stock = 300 X Rs.7.50		2,250

ii) Value of closing inventory according to LIFO method on 31st March, 1998 using Perpetual inventory system.

Date	Details	Units				
March 1	Opening Stock	400				

March 3	Issues	300				
		100				
March 5	Purchases		600			
March 10	Issued		500			
			100			
March 15	Purchases			500		
March 17	Issued			400		
				100		
March 25	Purchases				400	
March 26	Issued			100	400	
				X	X	
March 30	Purchases					300
March 31	Issued					200
						100

(in Rs.)

Value of Stock = 100 X Rs.7.50 = 750

100 X Rs.8.00 = 800

100 X Rs.9.50 = 950

Value of stock on 31-03-1998 = 2500

(iii) Highest-in-First-out (HIFO) Method

This method is based on the assumption that closing stock of material or finished goods should always remain at the minimum value, so lots of the highest cost of materials purchased or goods manufactured are exhausted first. Consequently closing stock is valued at the minimum value of various lots which are not exhausted up to the date of stock-taking. This method is not popular as it always undervalued the stock which amounts to creating a secret reserve. The method is mainly used in the case of cost-plus contracts or monopoly products as it helps increase the price of the contract or products.

(iv) Base Stock Method

Usually, each manufacturing concern maintains a minimum quantity of material in stock to meet emergency requirements such as undue delay in the supply of raw materials, excessive consumption, etc. This minimum quantity is known as safety or base stock.

Similarly, the minimum quantity of finished goods to be maintained to meet sales requirements at any particular time can be ascertained. It is, therefore, expected that there will be no variation in the volume of closing stock and opening stock provided there is no change in the scale of operation and other factors. The base stock is usually created out of the first lot of material purchased or goods manufactured and, therefore, it is valued at the cost price of the first lot and is carried forward as a fixed asset.

The method works with some other methods and is generally used with FIFO or LIFO method. Therefore, the advantages or disadvantages of the method with which the base stock method is used will arise. Any quantity over and above the base stock is issued by the other method which is used in conjunction with this method. The objective of this method is to apply the current prices to issues. This objective will be achieved only when the LIFO method is used together with the base stock method.

(v) Inflated Price Method

Under this method, closing stock is valued at a price higher than the actual cost to provide for the normal loss. For example, 1,000 tonnes of coal are purchased @ Rs. 300 per tonne, incidental expenses being Rs. 15,000. If the loss due to loading and unloading is 50 tonnes and if the quantity of coal used is 760 tonnes, then the value of closing stock (190 tonnes) of coal will be as follows:

Cost of 1,000 tonnes of coal @ Rs. 300	Rs. 3,00,000
Add: Incidental expenses	15,000
	3,15,000

The cost of 1,000 tonnes becomes the cost of 950 tonnes because of a normal loss of 50 tonnes.

Therefore, value of closing stock = $\frac{3,15,000\ X\ 190}{950}$ = Rs. 63,000/-

Problem 4

Mani LTD has purchased and issued the material " M " in the following order 2020.

2020	MONTH	PARTICULARS	UNITS	UNITS COST (Rs)
1st	December	Purchase	300	3
4th	December	Purchase	600	4

6th	December	Issue	400	
10th	December	Purchase	600	4
15th	December	Issue	1000	
20th	December	Purchase	400	5
23rd	December	Issue	200	

Which of the methods of pricing issue of materials would you recommend in the above case ? ascertain the quantity of closing stock as on 31st

December and state what will be its value (in each case) if issues are made under the :

(i) **Methods recommended .**

(ii) **Weighted average cost** .

SOLUTION

In the present problem, prices of material "M" are rising. In times of rising prices Last -in-First- Out (i.e LIFO) Method of pricing issues is suitable because materials are issued at the current market prices which are high . The methods thus helps in showing a less profit because of increased charge to production during periods of rising prices and less profit imposes reduced liability of income tax. Keeping in view the increase in price of materials" M" from Rs.3 to 5 per unit, the recommended method of valuing issues is LIFO

i) MATERIAL "M" ACCOUNT

Issues are priced according to the Recommended i.e., **LIFO methods**

Date	Particulars	Receipts			Issues			Balance		
2020		Qty units	RATE IN PRICE(Rs)	AMT (Rs)	Qty units	Rate in price(Rs)	AMT(Rs)	Qty units	Rate in price (Rs)	AMT (Rs)
Dec 1	Purchase	300	3	900				300	3	900
Dec 4	Purchase	600	4	2,400				300	3	900
								900] 600	3300] 4	2400
Dec 6	Issue				400	4	1,600	300	3	900
								500] 200	1700] 4	800
Dec 10	Purchase	600	4	2,400				300	3	900
								1,100] 200	4100] 4	800
								600	4	2400
Dec 15	Issue				600	4	2,400			
					1000] 200	4	3800] 800	100	3	300
					200	3	600			
Dec 20	Purchase	400	5	2,000				100	3	300
								500] 400	2300] 5	2000
Dec 23	Issue				200	5	1000	100	3	300
								300] 200	1300] 5	1000

value of closing stock on 31st December 2020 is:

	Rs
100 units @ Rs 3	300
200 units @ Rs 5	1000

Total value of 300 units	1300
	---

ii) MATERIALS "M" ACCOUNT

Issues are priced according Weighed Average Cost Methods

MATERIAL 'M' ACCOUNT									
(Issues are prices according to the Weighted Average Cost Method)									
Date	Particulars	Receipts			Issues			Balance	
		Quantity	Rate per unit	Amount	Quantity	Rate per unit	Amount	Quantity	Amount
2021		Units	Rs.	Rs.	Units	Rs.	Rs.	Units	Rs.
Dec 1	Purchase	300	3	900				300	900
Dec 4	Purchase	600	4	2400				900	3300
Dec 6	Issue				400	3667 $\left\{\frac{3300}{900}\right\}$	1467	500	1833
Dec 10	Purchase	600	4	2400				1100	4233
Dec 15	Issue				1000	3.85 $\left\{\frac{4233}{1100}\right\}$	3850	100	383
Dec 20	Purchase	400	5	2000				500	2383
Dec 23	Issue				200	4.77 $\left\{\frac{2383}{500}\right\}$	959	300	1429

The last entry in the balance column in the above account is closing stock. Thus, the value of the closing stock of 300 units on 31st December is Rs.1429.

PROBLRM 4.

The following transactions in respect of material T 21 occurred during the six months ended

December 31.

Date	Purchase	Price (Per kg) in Rs.	Issues (kg)
July	220	2.50	250
August	250	2.40	220
September	240	2.60	200
October	220	2.30	240
November	260	2.50	210
December	200	2.275	210

The opening stock on July 1 was 240 kg. at Rs. 2.40

The closing stock on December 31 was 300 kg. at Rs. 2.39 per kg.

Do you consider the value of the closing stock shown above to be justifiable?

Give reasons.

SOLUTION.

The closing stock on December 31 has been valued at the weighted average method of pricing issues of materials as shown in the following table Closing stock has not been valued at cost or market price whichever is lower but has been valued at a weighted arithmetic average which is neither cost nor market price. But in periods of fluctuations in the prices of materials, the weighted average cost gives better results because it tends to smooth out fluctuations in prices by taking an average of prices of various lots in stock moreover, this method recovers the cost of materials from production. so the value of closing stock at the weighted average cost is justifiable when there are fluctuations in prices.

STORES LEDGER METHOD
(Weighted Average Method)

DATE	REFERENCE	RECEIPTS			ISSUES			BALANCE	
		Quantity kgs	Rate per price Rs	Amount Rs	Quantity kgs	Rate per price Rs	Amount Rs	Quantity kgs	Amount Rs
July	Balance b/d	----	----	-----	----	----	----	240	576
July	G.R.N No...	220	2.50	550	----	----	----	460	1,126
July	R.S No..	----	----	----	250	$\left[\frac{1126}{460}\right]$ =2.45	613	210	513
August	G.R.N No...	250	2.40	600	----	----	----	460	1,113
August	R.S No..	----	----	----	220	$\left[\frac{1113}{460}\right]$ = 2.42	532	240	581
September	G.R.N No...	240	2.60	624	----	----	----	480	1,205
September	R.S No..	----	----	----	200	$\left[\frac{1205}{480}\right]$ =2.51	502	280	703
October	G.R.N No...	220	2.30	506	----	----	----	500	1209
October	R.S No..	----	----	----	240	$\left[\frac{1209}{500}\right]$ =2.42	581	260	628
November	G.R.N No...	260	2.50	650	----	----	----	520	1,278
November	R.S No..	----	----	----	210	$\left[\frac{1278}{520}\right]$ =2.46	517	310	761
December	G.R.N No...	200	2.275	455	----	----	----	510	1,216
December	R.S No..	----	---- ----		210	$\left[\frac{1216}{510}\right]$ =2.39	502	300	714

How to calculate the value of closing stock when it is not given? (format)

The value of closing stock is calculated as follows

Stock at the beginning of the period		
(i.e., opening stock)		x x x
Add: Purchases less purchases returns during the year		x x x
Value of goods that would have been in stock		
had there been no sales		x x x
Less: Cost of Sales: Sales less sales return	x x x	
Less : Gross profit	x x x	x x x
Stock at the end of the period		x x x
(i.e., closing stock)		

If the value of a closing stock is given but the value of the opening stock is not given, the procedure for the ascertainment of the value of the opening stock is the revenue that followed above. It is as follows :

Closing Stock		x x x
Add: Cost of Sales: Sales less Sales returns	x x x	
Less : Gross Profit	x x x	x x x
Value of total goods available for sales		x x x
Less: Purchases less purchases returns		x x x
Stock at the beginning of the period		x x x
(i.e., opening stock)		

LETS SUM UP :

Dear learners in this section we learn about inventory management and its types and methods. I think you understand inventory, especially economic order quantity valuation. Net working capital is the difference between current assets and current liability. Gross working

Capital is the total of all current assets. Working capital requirements are influenced by factors

like nature and type of businesses, length of operating cycle, size of business working capital policies and efficiency of operations. A firm may follow conservative approach, aggressive approach or moderate approach to determine working capital policy. There are two ways of financing of working capital- debt financing and equity financing. Equity Financing provide margin on working capital.

MULTI CHOICE QUESTIONS

1. Inventory held for sale in the ordinary course of business is known as …….

(A) Finished Goods (B) Raw Material

(C) Work-in-progress (D) Miscellaneous inventory

2. Under of inventory valuation, the historical cost of inventory is estimated by calculating at selling price and then deducting an amount equal to the estimated gross margin of profit on such stocks.

(A) Simple Average Price Method (B) Weighted Average Price Method

(C) **Adjusted Selling Price Method** (D) Market Price Method

3. Under which of the following method of inventory valuation, the closing inventory is valued at the lowest possible price?

(A) Standard cost method (B) Adjusted selling price method

(C) Specific identification method **(D) Highest-in-first-out method**

4. Which of the following technique can be used for inventory control?

(A) Standard Costing (**B) ABC Analysis**

(C) Integrated Accounting System (D) Any of the above

5. Which one out of the following is not an inventory valuation method?

(A) FIFO (B) LIFO (C) Weighted Average **(D) EOQ**

Module-5

WORKING CAPITAL FINANCING, FINANCIAL ANALYTICS

Introduction to Working Capita Management :

working capital financing is the financial support necessary to address the daily operational costs of a company. This funding is crucial for sustaining the liquidity required to handle short-term operational requirements like payroll, inventory procurement, rent and utility payments, and other regular expenses. Working capital financing guarantees that a company has enough cash flow to fulfill its commitments and sustain seamless operations.

5.1 Importance of working capital finance

1.Safeguards satisfactory Cash Flow:

Working capital financing ensures that businesses have sufficient cash flow to cover day-to-day operating expenses, avoiding disruptions due to a lack of cash flow. Maintains

2.Stands Business Operations:

By securing the necessary working capital, businesses can run their operations smoothly by covering necessary expenses such as payroll, rent, subsidies, and inventory.

3.Manages seasonal fluctuations:

working capital financing helps businesses manage seasonal fluctuations in sales and expenses by providing needed funds during slow times when revenues may be lower.

4.Promotes Business productivity:

Access to working capital allows businesses to invest in growth opportunities, such as expanding inventory, hiring employees, or opening new locations, while maintaining day-to-day operations.

5. Strengthens relationships with suppliers: Adequate working capital allows companies to pay suppliers on time or receive prepayment discounts, which promotes better terms and relationships with suppliers Protects against financial risks: Adequate working capital acts as a safety net against unexpected costs or economic downturns and ensures the stability of the business in difficult times.

6. Improves creditworthiness: Consistent management of working capital at an optimal level can improve a company's credit rating, making it easier to secure future financing on favorable terms.

7. Minimizing Borrowing Costs: Effective capital management helps reduce the need for emergency loans, which usually result in higher interest rates and fees, thus reducing the overall cost of borrowing.

8. Enhancing operational effectiveness: Proper working capital management enables companies to optimize inventory levels, simplify accounts receivable and payment processes, and reduce unnecessary costs, resulting in improved operating efficiency.

9. Supports strategic decision-making: working capital financing facilitates strategic planning by providing the necessary resources to implement growth strategies, invest in new opportunities, and adapt to changing market conditions

5.3 Types of Working Capital Finance

There are several ways of financing working capital. The most common are working capital loans

Over drafts

Lines of credit

Invoice financing

5.4 Source of working capital

i) Short time

ii) Long time

i)Short-term source of working capital.

1. Trade credit:

Suppliers allow businesses to purchase goods or services and pay for them later, usually within 30 to 90 days.

Advantages: Easily obtainable, timely interest payments can improve cash flow.

2. Loans

Description: Loans issued by banks or financial institutions that must be repaid within one year.

Advantages: Provides fast cash, and flexible repayment terms.

3. Line of Credit:

A credit agreement provided by banks or financial institutions that allows businesses to draw funds up to a certain limit as needed.

Advantages: Flexible loan, pays interest only on the amount used, can be used repeatedly after repayment.

4. Accounts Payable (Account Financing):

Businesses can borrow on a payday loan to receive cash immediately instead of waiting for customer payments.

Advantages: Quick access to cash, improves cash flow based on claims.

4. Factoring

Invoices receivable to a third party (factor) with a discount against immediate cash.

Advantages: Instant cash, reduces collection, reduces credit risk.

5.Business Cash Page:

An advance paid for a fixed percentage of future sales. Advantages:

fast access to funds, repayment linked to sales volume

Long-term Sources of Working Capital

Its recommended for companies that need financing for more than a year. These can be internal, such as retained earnings and depreciation, or external, such as equity, long-term borrowings, and liabilities. Equity means giving companies to shareholders

in return for a dividend, while long-term loans provide working capital for short-term operational needs. Debt requires companies to disclose profits paid to creditors and to pay an agreed interest regardless of the use of funds or the status of the company. Like as: Debentures

Share Capital

Working capital loans from traditional lenders (Overdraft agreements are pre-negotiated loans allowing you to borrow from the bank as needed without penalty. Interest is charged on the amount withdrawn.)

Based on historical trends and assumptions about most likely trends during the projected period, the estimates/projections for production, sales, chargeable current assets, other current assets, current liabilities other than bank borrowings, and net working capital are reasonable.

(b) The Reserve Bank of India's rules are followed in classifying assets and liabilities as "current" and "non-current."

Over the past few years, the role of finance has evolved significantly, becoming

FINANCIAL ANALYTICS

Meaning

Over the past few years, the role of finance has evolved significantly, becoming more complex and demanding. Chief Financial Officers and their teams are facing challenges such as the need for greater transparency, economic uncertainty, and changing regulatory environments. They are focusing on areas like forecasting, profitability management, cost management, and enterprise risk management to carry out their responsibilities effectively. Improving data reliability and implementing new finance initiatives are essential for making better business decisions and achieving successful outcomes.

Problem 1 : Calculate the minimum stock level, maximum stock level and re-order level from the following information.

Minimum consumption 100 Kgs per day; Maximum consumption 150 Kgs per day; Normal consumption 120 Kgs per day ; Re-order period 10 – 15 days; Re – order quantity 1500 Kgs; Normal re – order period 12 days; Time for emergency supplies 3 days.

Solution :

1. Re – order level :

Maximum consumption x Maximum re – order period

= 150 x 15 = 2,250 Kgs.

2. Minimum level :

Re – order level – (Normal consumption x Normal re – order period)

= 2,250 – (120 x 12) = 2,250 – 1,440 = 810 Kgs.

3. Maximum level :

Re – order level + Re – order quantity – (Min. Consumption x Min. re – order period)

= 2,250 + 1,500 – (100 x 10)

= 3,750 – 1,000 = 2,750 Kgs.

4. Danger level :

Minimum consumption x Emergency delivery time

100 x 3 = 300 Kgs.

Problem 2 : Cost of material is Rs.30 p.u. Total amount needs are 800 units. Annual return on investments is 10%. Rent, insurance and taxes per unit, per annum Re.1. Cost of placing an order is Rs.100. calculate the Economic Order Quantity.

Solution :

Economic Order Quantity = $\sqrt{\frac{2\,AO}{C}}$

A – Annual consumption = 800 units

O – Cost of placing an order = Rs.100

C – Carrying Cost = Interest + Rent , Insurance & Taxes

Interest Cost = 10% on the material price

= 10% of Rs.30 = Rs.3 p.u.

Insurance, Rent and Taxes = Re.1.p.u.

Total carrying cost p.u. = Rs.3 + Re.1 = Rs.4

E.O.Q.

LETS SUM UP :

Working capital management is the process of making better use of a company's assets by monitoring and optimizing existing assets and liabilities. The goal is to maintain cash flow to cover short-term operating costs and debt

obligations and to increase profits. Working capital is calculated by subtracting current liabilities from current assets. Current assets include cash, accounts payable, and inventory, while current liabilities include accounts receivable, current liabilities, accrued liabilities, income taxes payable, and payments due paid. Good working capital represents good money.

ANSWERS TO CHECK YOUR PROGRESS	
Module 1	1. (D) All of the above 2. (C) current assets 3.(D)Financing some long-term needs with short-term funds 4. (C) temporary 5. (A) Fixed Assets
Module 2	1. (A) Fixed Assets 2. (B) Sunk Costs, 3. (D) The company is able to pay off its short-term liabilities. 4. (C) Purchase or discounting of bills 5. (C) Operational and financial
Module 3	1. (C) Cash management involves the efficient processing, collection, and depositing of cash. 2. (C) Optimization of cash balance 3. (B). Payback period. 4. (C) 16.8% 5. (A) 15% and 25%
Module 4	1. (A) 1%. 2. (C) 8% 3. (D) Factoring 4. (A) Risk & Profitability 5. (A) To obtain the optimum (not maximum) value of sales.

Glossary :	
Working Capital	Working capital is the amount of money a business has available for its day-to-day operations. It is the difference between a company's current assets and current liabilities. In simpler terms, it is the amount of funds required to meet the short-term expenses of business.
Gross Working Capital	The total of current assets
Line of Credit	An agreement between the bank and the borrower where in the bank commits a certain line of credit permitting the company to borrow upto that limit during a specified period.
Net Working Capital	The difference between current assets and current liabilities.
Operating Cycle	The time period between the acquisition of inventory and the collection of cash from receivables.
Money Market	Market deals with short term funds.

UNIT ACTIVITIES :

(VII) Short Answers :

1) Define Working Capital and the Components of Working Capital?
2) Explain the Factors Affecting Working Capital Requirements
3) Define working capital.
4).Write the objectives of working capital management.
5)Write the objectives of working capital management
6)List the factors affecting working capital
7).Mention the need of working capital management
8)Draw the working capital cycle
8).List the various components of operating cycle.
9). Define cash management.
10).What is receivable management?

11). Explain credit policies. 1.What are the aspects of working capital management? a. Inventory management b. Receivable management c. Cash management d. All of the above1.What are the aspects of working capital management? a. Inventory management b. Receivable management c. Cash management d. All of the above

Essay Type Answers :

1) Explain the factors that influence working capital needs.

2) Explain the different approaches of working capital policy. What are their consequences?

3) How the risk and return trade off is maintained by working capital policy?

4) How working capital requirements can be ascertained?

5) Explain the different formal and informal credit arrangements?

6) Define 'Money Market". Explain its characteristics.

7) Write short notes on:

a) Working Capital Rations

b) T bills and Repo

8) What were the challenges faced by the manufacturing company related to working capital management?

9) What measures did the company take to optimize its working capital management?

10) What were the positive outcomes of the company's working capital management Initiatives?

References :

1.Dr.V.R.PALANIVELU - Financial Management,

2. Dr.V.R.PALANIVELU - Accounting for Managers